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The Cyprus Agricultural Journal.

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EDITORIAL NOTES.

VERY heavy rains fell during December all over the Island, which were exceptionally heavy in the Kyrenia District and caused considerable damage. Heavy rains continued in the early days of January, and in consequence of the wet condition of the land, the sowing of cereals has been delayed in localities where sowing had not been done with the early rains. In very low-lying areas where the land had been sown to cereals and since flooded, resowing will very probably have to be done. A drop in temperature, which accompanied the rains, caused a check to the young barley and grass and grazing is not yet very good. However, with an improvement in the conditions the planting of cereals continues and with the advent of warmer weather an ample supply of grazing in the spring is looked for.

These heavy rains have furnished an abundant supply of water in the rivers and lands depending on river water for irrigation have been better irrigated than they have been for many years past, so that the prospects of summer crops, such as cotton, sesame, melons, etc., are very promising.

The prospects of crops in general and stock for the year 1930 are, on the whole, favourable in most localities and a prosperous year for agriculture is anticipated.

* * *

The Comptroller of Customs reports that, for the eleven months January–November, 1929, the following are the values of imports and exports as compared with the same period of the previous year :—

				Imports.	Exports.
				£	£
1929	..	..	..	1,864,532	1,516,296
1928	..	..	..	1,634,076	1,321,100
Increases				<u>£230,456</u>	<u>£195,196</u>

The Agricultural and Industrial Exhibition, which it was proposed should be held at Nicosia early in 1930, has been postponed until 1931.

A resolution was unanimously approved in the Legislative Council at its recent session supporting the holding of the Exhibition and agreeing to a contribution by the Government of £2,500 towards the cost.

It is now proposed to hold the Cyprus and Near East Agricultural and Industrial Exhibition in the first week of October, 1931, and a detailed scheme is being prepared.

* * *

Work at the Zodia Mill is now over for the season. A total of 51,776 okes of flax straw has been scutched and a consignment of 9 tons of fibre has been shipped to the United Kingdom for sale.

Endeavours are being made to popularise the "J.W.S." strain of flax and quantities of seed have been issued to farmers in selected areas for planting under departmental control.

* * *

The selection of the three Cypriot English speaking youths for training at the Royal Botanic Gardens, Kew, has now been made. Particulars regarding the studentship were published in a notice in the July issue of this Journal last year. The three youths selected are :—

Anastassios Synkrassides, Nicosia.

Basil Geo. Palma, Famagusta.

Kyriacos Hamboullas, Perapedhi.

* * *

Mr. H. G. Cayley, the Rat Destruction Expert, has now completed his mission in connection with the destruction of rats and departed from Cyprus on the 8th January for Egypt where he has been engaged by the Egyptian Government on a similar mission to that which he had in Cyprus. An outline of the Rat Destruction Campaign being conducted by the Government in 1930 is published elsewhere in this issue.

* * *

Lath houses have been erected in the Nicosia and Kyrenia Nursery Gardens. In California, where climatic conditions are somewhat similar to that of Cyprus, these houses are very popular and are of great service for the raising and growing of plants in the spring and during the hot summer months. The filtered sunlight which penetrates the structure, gives favourable conditions for the germination of seeds, the recovery of small plants after transplanting or potting, and the rooting of cuttings; it is also an agreeable place in which to grow ferns and any shade loving plants.

The lath house should be fitted with sets of benches. In a structure like this young plants are never in a deep shade, therefore, they are not weakened or attacked by fungus through shade at certain periods of the day as is often the case when plants are placed under shady trees or matting.



Lath house, Nicosia.

Seeds are first sown in boxes of a size fitting the side benches and when the seedlings are large enough they are transplanted into other boxes. Cuttings can be struck in sand on the side benches themselves and when rooted can be placed in pots or out of doors.

For small gardens a lath house seven feet wide is ample, this allows for an aisle three feet wide with a bench two feet on either side. The height need not exceed eight feet.

* * *

The Department of Agriculture have imported good varieties of young Pistachia trees, male and female, from Greece to provide material for grafting the many thousands of wild Pistachia trees in the Island and for the fertilisation of existing trees. The propagation of these good varieties and the proper cultivation of this tree should form a new source of wealth to the Island.

* * *

A new plot of land has been purchased by the Government, adjoining the Nursery Garden, Paphos, for the purpose of raising mulberry trees on a large scale for distribution in the Paphos

District. This step should contribute to the expansion of the silk industry in Paphos which is already the first important District of the Island in cocoon production.

* * *

The plans for the Central Experiment Farm, Morphou, which are being prepared by the Architect, Mr. A. Turnbull, are now nearing completion and it is hoped that it will be possible for the scheme to be presented to the Secretary of State for final approval at an early date.

* * *

A new field of 40 donums in extent has been acquired pending the establishment of the Central Experiment Farm, for experimental cultivation of cereals. Some 148 varieties of cereals, native and imported, are now under trial.

* * *

A further field of six donums has been acquired by the Department of Agriculture for experiments with Egyptian, American and Asiatic varieties of cotton.

* * *

A new Nursery Garden, exclusively for raising citrus stock, has been started with the new year at Karavostasi.

* * *

Some twenty varieties of olives, suitable for bottling and olive oil extraction, have been imported from Italy and are being planted at Vallia in the Demonstrational Olive Plantation there.

* * *

Good progress has been made with the Citrus Experiment Station at Famagusta. The land has been cleared of wattle, levelled and a boring made for a well and the land is now being laid out for planting.

* * *

As the result of enquiries made by the Department of Agriculture, an order has been received for forty cwts. of onion sets from an English seedsman for immediate shipment. This is the first occasion, it is believed, that onion sets have been shipped to England in commercial quantity and it is hoped will prove the beginning of an important new trade. Reference to the possibilities of the production of onion sets and seed was made in the Agricultural Supplement for October, 1928.

* * *

Three she-donkeys have been purchased by the Government for the Ministry of Agriculture, Egypt. It is understood they are to be used for breeding purposes. All three were purchased at the village of Athiaenou, which village is famed for its donkeys and mules.

A further request for she-donkeys has been received from Egypt.

Two Jack donkeys were purchased at the Ayios Lukas fair. They will be used for Government stud purposes.

* * *

Three pack mules have been purchased by the Palestine Government to go to Iraq.

* * *

Mr. Chr. Georghiades, Secretary of the Turf Club, Nicosia, will issue Certificates to owners who intend exporting race horses. The Certificates, if issued, will be to the effect that the horse is what it is claimed to be. Certificates of breeding should be produced to the Secretary when such applications are made.

* * *

Surplus stock from the Government Stock Farm, Athalassa were sold by auction at the Nicosia Moat on the 15th November and good prices were realised.

Twelve Government boars are let out for service in the Paphos District. These boars are let out under the following conditions : the lessee keeps and feeds the boar for three years and receives service fee not exceeding three shillings per service, the boar becomes the property of the lessee at the end of three years.

* * *

A new breed of poultry, namely, Red Sussex, has recently been imported from England. These are the largest fowls so far introduced into the Island. They may be seen either at the Government Stud Farm, Athalassa, or at the Show Pens at the Paphos Gate, Nicosia.

* * *

Pitchford by Lemberg out of Margarethal one of the new thoroughbreds recently purchased in England arrived in Cyprus, and is now in quarantine at Famagusta. He is six years old and has a good recommendation from the British Live Stock Agency. Watercoskie by Koscinsko out of Waterproof is stationed at Athalassa.

* * *

It was unfortunate that funds did not permit the holding of the Autumn Race Meeting. It is hoped that it will be possible to hold a meeting in the spring during Easter, the Government having decided to support race meetings.

* * *

Growers and others interested in the tobacco industry will regret to learn of the death, early in December last, of Mr. C. W. Dallas, who has for some time been the principal assistant and representative of Mr. G. Mills and was much esteemed by those with whom he had business relations.

Report on Lavender Oil from Cyprus.

BY THE IMPERIAL INSTITUTE.

THE two samples of lavender oil which are the subject of this report were forwarded to the Imperial Institute by the Director of Agriculture, and are referred to in his letter No. Agr. 253/28 of the 21st August, 1929.

One sample was distilled from plants grown at Nicosia at 442 feet above sea level, and the other at Pedoulas at about 3,500 feet above sea level. The yields of oil were stated to be 2.20 and 2.82 per cent. respectively.

DESCRIPTION.

The samples each consisted of 120 grammes of oil and were as follows :—

"No. 1. From *Lavandula vera* growing in Nicosia."—This oil was rather turbid, owing to the presence of moisture.

No. 2. From *Lavandula vera* growing in Pedoulas."—This oil was almost clear.

After filtration both oils were pale brownish-yellow, No. 2 being very slightly darker than No. 1. Both had the characteristic odour of lavender oil, but they also possessed a marked odour of cineole.

RESULTS OF EXAMINATION.

The filtered oils were found to have the following constants, which are shown in comparison with those for the previous sample of lavender oil from Cyprus dealt with in Imperial Institute report dated 16th October, 1925, and with those recorded by Parry for English and French lavender oils :—

	Present Samples.		Previous sample from Cyprus.	English Lavender Oil (Parry). *	French Lavender Oil (Parry).*
	No. 1	No. 2			
Specific Gravity at 15/15°C.	0.8959	0.8976	0.894	0.884 to 0.898	0.882 to 0.900
Optical Rotation α_D	-0.35°	-0.50°	-0.6°	-4° to -10°	-3° to -9°
Refractive Index $n_D^{20^\circ\text{C.}}$	1.4655	1.466	1.466	1.464 to 1.472	1.460 to 1.464
Acid Value	0.6	0.3	0.3	—	—
Ester Value	22.0	17.8	11.8	—	—
Ester Value after acetylation	165.1	150.9	127.1	—	—
Esters calculated as linalyl acetate, per cent.	7.7	6.2	4.1	7 to 11	25 to 45
Solubility in 70 per cent. alcohol at 20°C.	Soluble in 2.3 vols. No. turbidity on further dilution.	Soluble in 2.3 vols. No. turbidity on further dilution.	Soluble in 2 vols. Very slight opalescence on further dilution.	Soluble in 2.5 to 3 vols.	Soluble in 2 to 3 vols. sometimes with slight opalescence.

* Cyclopaedia of Perfumery, 1925, p. 386.

From these figures it will be seen that, with exception of the optical rotation, the constants of the two Cyprus oils agreed on the whole with those of English lavender oil, and that both contained more esters than the sample of Cyprus lavender oil examined at the Imperial Institute in 1925. The latter and the two present samples all had similar optical rotations, and were appreciably less lævo-rotatory than ordinary English and French lavender oils.

Both oils were superior in odour to that examined in 1925, but the marked odour of cineole rendered them inferior in aroma to English and French lavender oils.

COMMERCIAL VALUE.

The oils were submitted to two firms of essential oil distillers in London, who furnished the following reports:—

(1) The samples of lavender oil have been examined, and we find that the odours are fair. While it would be difficult to sell these oils on the market in competition with those that are regarded as standard, it might be possible to find a special outlet for them, and without committing ourselves in any way we should suggest a price between 5s. and 6s. per lb. It might be possible to obtain an even better price, but the question is problematical until a definite attempt is made to sell.

(2) The oil grown on the low elevation is much superior to that grown on the high elevation. The physical characters composition and odour more closely resemble Mitcham oil than French. The odour value, however, is not so fine as that of Mitcham oil, and we should not think that the market value is higher than 5s. per lb. for No. 1 and 3s. per lb. for the No. 2 sample. The samples in fact are of little greater value, in our opinion, than good quality Aspic (spike lavender oil).

REMARKS.

From the foregoing results it will be seen that lavender oils represented by the two present samples should find a market in the United Kingdom, but that they could not compete with English and French lavender oils. French lavender oil was recently quoted in London at 14s. 6d. to 15s. per lb. and spike lavender oil at 3s. to 4s. 6d. per lb. If the Cyprus oil could be offered at a price of about 5s. per lb. in London it would be desirable to forward a larger quantity (10 to 14 lb.) for further examination and trial sale.

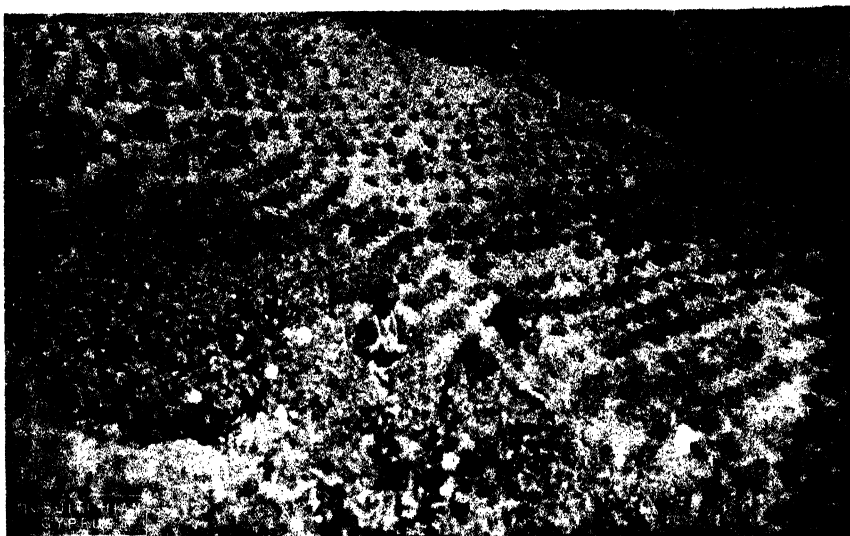
In connection with the yields of 2.20 and 2.82 per cent. obtained in the present case in Cyprus, it may be mentioned that the normal yield of oil from fresh lavender flowers distilled in England is stated to be from 0.8 to 1.5 per cent., and if the present oils were distilled from the undried flowers the yields of oil obtained were very satisfactory.

The Production of Otto of Rose in Cyprus.

THE area under cultivation of *Rosa damascena*, the ordinary damask rose, is over fifty donums. This area, which is mainly in the vicinity of the Kykko and Mylikouri villages is increasing every year, uncultivated lands being planted up.

The cultivation of the rose plant is also extending in other parts of the Island with great success and a considerable increase in production of otto is anticipated at an early date.

The average yield in Kykko is approximately 1 dram of otto of rose from $8\frac{1}{2}$ okes of roses.



A rose plantation at Kykko.

The yield is variable according to climatic conditions. A warm humid spring being most favourable. Very heavy rains or extreme climatic conditions affect the yield considerably.

Last year's yield of roses was much lower than that of the previous year. This is attributed to the fact that the early buds were destroyed by the frost and snow of February and March.

The Department of Agriculture has loaned out a still every year since 1919 for the distillation of the otto at Kykko Monastery. Last year the distillation was carried out there under the supervision of the Chemist of the Department and a demonstrational distillation was carried out. A great improvement in the quality and quantity of rose oil produced was effected. This was brought about by introducing better methods of collecting, transporting and distillation.

The flowers should be gathered before they commence to open in the early morning just before sunrise and picking continue generally until eight o'clock in the morning. In cloudy days, picking may continue during the whole day. It is most important that on no account should roses be picked when the direct rays of the sun are on them.

The roses should be taken direct to the stills and distilled as quickly as possible.

The distillation at Kykko last season lasted thirteen days. 1,100 okes of roses were distilled. 105 drams rose oil and 150 okes rose water were produced at this distillation. Practically the whole production of Mylikouri was distilled by local stills and rose water produced.



A rose collecting party.

1 & 4 Monks of Kykko Monastery.

2 Abbot of Kykko.

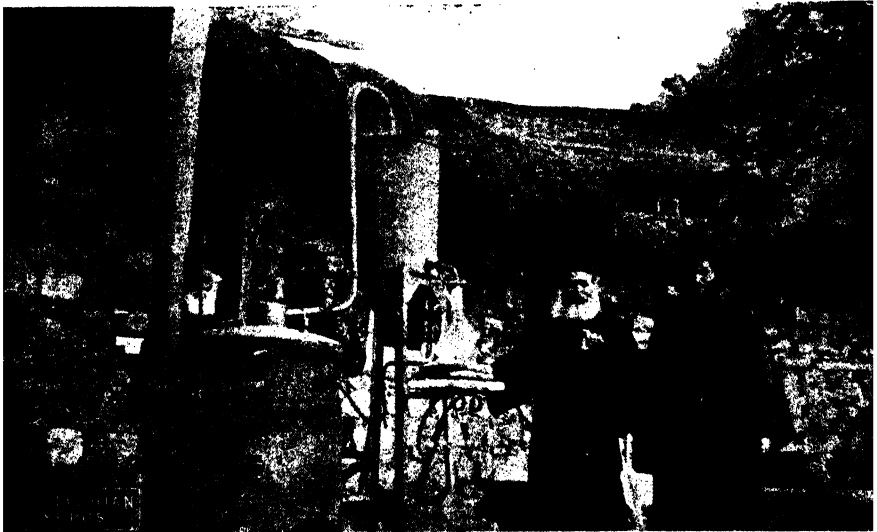
3 Director of Agriculture.

The stills in use are very primitive. They consist of copper alembics from three to five feet high resting on a brick furnace. The average capacity is twenty gallons, the charge being twenty kilos of flowers and seventy litres of water.

The condenser is a straight tube passing through a large jar of water into which cold water continually runs. A brisk fire is kept up for two hours and when fifteen litres of liquid are obtained the fire is drawn. The spent flowers are removed and the residual hot water returned to the still. Cold water is added to make up the seventy litres and a fresh charge of flowers added.

This operation is repeated until sixty litres of rose water have been collected.

The sixty litres of rose water are distilled in a European still and the first ten litres are collected in a long necked bottle. The residue fifty litres are used for distilling fresh flowers. The ten litres distilling over are cloudy and the oil drops gradually rise and collect in the neck of the flask. When the whole has risen it is removed by a pipette and placed in a coloured bottle.



Distillation of otto of rose

The production of otto of rose from Kykko was sent to London for sale and the following satisfactory report has been received from the Director of the Imperial Institute :—

REPORT ON OTTO OF ROSE FROM CYPRUS BY THE
IMPERIAL INSTITUTE.

The consignment of otto of rose which is the subject of this report was forwarded to the Imperial Institute by the Director of Agriculture, and is referred to in his letter No. Agr. 105/28 dated 13th March, 1929.

The otto had been produced at the Kykko Monastery, and it was desired that it should be disposed of to the best advantage through a firm of importers in London.

DESCRIPTION.

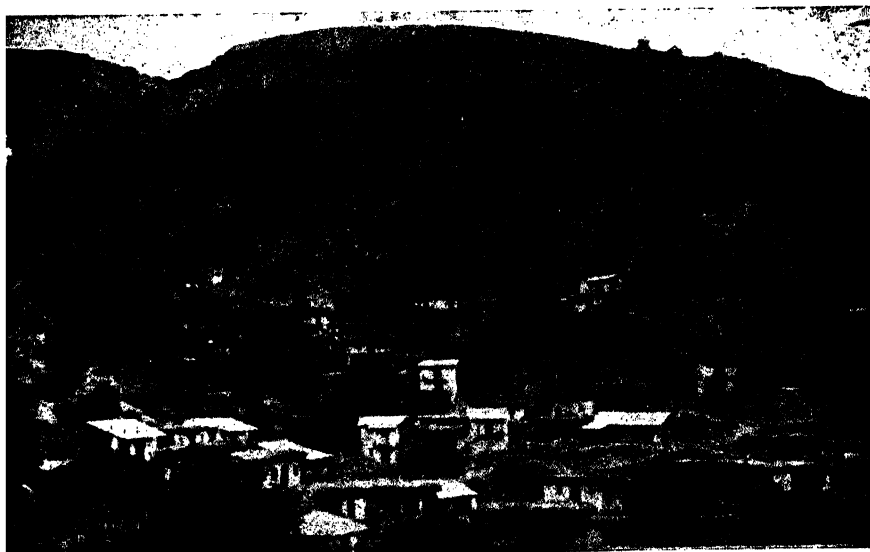
The otto was forwarded in $2\frac{1}{2}$ lb. bottles and was transmitted intact by the Imperial Institute to the importers for sale. Samples of about 3cc., drawn by the firm for examination at the Imperial Institute and labelled "brown bottle" and "blue bottle" respectively, consisted of clear, pale brownish-yellow

oil, with an odour similar to that of previous samples of otto received at the Institute from Cyprus.

RESULTS OF EXAMINATION.

The oils were found to have the following constants, which are shown in comparison with (a) the figures obtained for the samples of Cyprus otto from the Kykko Monastery which were the subject of Imperial Institute reports of the 31st July, 1928, and 24th January, 1929, and (b) those recorded for Bulgarian otto :—

	Present Samples.		Previous Samples from Kykko Monastery.		Bulgarian Otto.
	Brown bottle.	Blue bottle.	(1)	(2)	
Specific Gravity at 30/15°C.	0.875	0.873	0.875	0.876	0.849 to 0.858
Optical Rotation α _D	-2.15°	-2.30°	-1.95°	-2.9°	-1.5° to -4°
Refractive Index, n _D 25°C.	—	—	1.471	1.470	1.458 to 1.465
Congealing Point °C.	+13°	+16.5°	+13°	+12.4°	+19° to +22°



Village of Mylikouri.

These results indicate that the oil in the two bottles, of which the present consignment consisted, was not identical, although the constants did not differ appreciably, except in regard to the congealing point. The congealing point of all the samples from Kykko has been distinctly lower than that of Bulgarian otto.

COMMERCIAL VALUE.

The consignment was placed in the hands of a firm of importers in London who disposed of it at a price of 35s. per oz., which they considered a very fair figure, especially as otto from the present source is new to the market and the buyer could not ascertain its exact value until it has been tested in the manufacture of perfumes. At the present time Bulgarian otto of rose is quoted at 25s. to 45s. per oz., for fair to good "commercial" qualities and 50s. for a good branded oil.

REMARKS.

The results of the sale of the present consignment indicate that a market can be found in London for otto of rose from Cyprus and the importers have expressed a desire to receive further supplies for disposal.

Outline of the Rat Destruction Campaign for 1930.

DURING the last seventeen years, in order to encourage those concerned to take the necessary steps to protect their property from damage by rats, it was the practice of the Government to purchase all rat tails brought in to appointed centres, and during this period a total of 2,449,868 tails were purchased at a cost of £17,396. The price which was paid per tail varied from $\frac{1}{2}$ cp. to $1\frac{1}{2}$ cp. but for the last six years it was $1\frac{1}{2}$ cp.

The number of rat tails purchased, and the total amount expended from 1913 to 1929, is shown in the following table :—

Year.	No. of rats.	Amounts paid.		
		£	s.	cp.
1913	123,970	500	0	0
1914	114,327	647	1	8
1915	162,900	887	10	0
1916	99,094	340	5	1
1917	68,578	287	2	1
1918	54,952	279	14	6
1919	80,825	380	16	7
1920	90,268	490	13	6
1921	74,807	415	11	8
1922-23	170,255	1,418	15	8
1924	149,240	1,243	13	4
1925	459,073	3,825	12	2
1926	164,247	1,368	14	5
1927	203,300	1,694	3	3
1928	224,688	1,872	7	4
1929	209,344	1,744	10	6

It is apparent from these figures that, in spite of this large purchase of tails, there has been no actual diminution in the existing number of rats; on the contrary it appears that they are even increasing in numbers.

If rats are allowed to breed uncontrolled, they are able to increase in number with remarkable rapidity, as they breed all the year round, producing an average of about eight young in each litter. Young rats are able to breed when they are three to four months old, while litters may, under suitable conditions, be produced as often as every four weeks.

A conservative estimate of the number of possible offspring of one pair of rats in a year is 880, while, making very ample allowance for casualties, it has been calculated, by another authority, that it is possible for the rat population to double its numbers in a year.

Exact evaluation of the damage caused by rats to trees, stored grain and other materials, is very difficult to arrive at, but it has been estimated at about £1 a year for each rat, while the damage caused to carob trees, in the Limassol District alone, has been estimated at £10,000 a year. It is, therefore, obvious that vigorous action is necessary to keep the rats under control and prevent their breeding in still greater and more destructive numbers.

The former system of purchasing tails, which ended on December 31st, 1929, only encouraged the trapping of rats, as, if poison is used, it is by no means certain that the bodies of any rats which are killed will be recovered, and there was, therefore, no incentive, under the reward system, for the use of poisons, as the motive of the rat catcher, was as a rule, rather to earn the reward than to rid the country of rats. Poisons are much quicker and more effective than traps for general use, and it is intended to rely chiefly upon the use of poisons in the campaign which is being carried out by the Agricultural Department in 1930.

Several different materials are used for the poisoning of rats, some of which are practically harmless to other animals while others are poisonous to all animals. The safest and most convenient poison to use is "red squill" which is generally used in the form of a fine powder. Red squill is readily taken by rats, when mixed with some food material such as barley meal. Farm and domestic animals and poultry are usually unwilling to take red squill and it is necessary for them to take very large quantities of it before any ill effects are observed, which makes this the safest material to use. The amount of red squill required to kill an adult male rat is about $\frac{1}{8}$ dram (.5 gm.), and for an adult female at about $\frac{1}{4}$ dram (.27 gm.), while the amount required to kill a chicken is 20 or 30 times this quantity.

Another method which has been widely used elsewhere with great success is that of pumping a fine dust, which at once liberates hydrocyanic acid gas, into the holes occupied by the rats, which causes almost instantaneous death to any rats which inhale it. This, and other methods, will also be used when the conditions are suitable for them, the poison or method being chosen in every case which is likely to give the most satisfactory results.

From the study of the local conditions and the results obtained hitherto, it is apparent that the number of rats at present in Cyprus is very great and is on the increase, but that they can be combated by the methods which have been mentioned and that these methods may be expected to give entirely satisfactory results.

In a campaign such as that now being entered upon, in which considerable quantities of poisonous materials prepared in special ways will be used, it is essential that the actual work should be in the hands of selected and trained men who can be trusted to do their work correctly and carefully, and in consequence the whole campaign for 1930 is being organised by the Agricultural Department.

The campaign will be carried out by fifteen trained Rat Destruction Officers, who will at first be stationed two each at the Nicosia, Famagusta, Larnaca and Kyrenia Districts, three at the Paphos District and four at the Limassol District, but it may be found desirable to change this arrangement later. These officers will be in close touch with the Commissioner of their district, who will exercise a general supervision of their work, while a Rat Destruction Supervisor will visit the officers in all districts as frequently as possible, inspecting the progress of their work and the results obtained, and arranging for the movement of the officers from village to village as may be required.

It is possible that after the campaign has been in progress some time it may be found that the full number of officers is not required, but it is considered that at first the campaign can not be carried out by less than the number indicated.

In some other countries there are laws in force under which every householder and farmer is held responsible for the destruction of rats in his buildings and land. There is at present no such law in Cyprus, and this campaign is being carried out during the present year in order to bring about as great a reduction as possible in the numbers of rats throughout the Island, after which it may be found practicable to introduce a law on similar lines into Cyprus, in order to place the responsibility

for rat destruction on the inhabitants and to ensure that co-operation in rat destruction, without which the best results cannot be hoped for. In the meantime during the campaign, it is hoped that all people throughout the Island will assist the Agricultural Department and its Rat Destruction Officers, as much and as far as possible, so that the campaign may achieve the results which are anticipated.

All officers engaged in the campaign bear a letter from the Commissioner of the District requesting all householders to allow them to examine their buildings and apply any measures which may be necessary against rats. Each officer also carries a letter to the Mukhtars from the Commissioner of the District, asking them to give all possible assistance in the work.

It is hoped that all the people of Cyprus will assist, as far as they are able, in making this campaign a success, so that the number of rats in the Island may be very considerably reduced, the damage caused by them to trees and food-stuffs prevented and the danger of diseases being spread by them removed.

Chestnuts.

By G. FRANGOS, *Superintendent of School Gardens.*

IN the year 1900 there were only three chestnut trees known to the writer to be existing in Cyprus. Two of these were at Pedoulas and the other near Lagoudhera village in the Pitsilia area

At Pedoulas there is a locality known as "Kastanias" which means chestnut trees, but no such trees have existed there for at least 50 years.

The chestnut tree at Lagoudhera village is more than 500 years old and this tree is grown in a locality named "Vasiliki" which means royal. The locality probably is an old estate of the Lusignan kings.

The fruits of these three trees have deep folds and the membrane which covers their kernel has a tart flavour and goes deep into the folds. These facts bring one to the conclusion that the trees belong to the wild species *Castania vulgaris*.

There is another locality known as "Kastanias" (chestnut trees) at Kyperounda village, but no chestnut trees exist there at present. The existence of such localities in two different villages lying far apart, indicates that chestnut trees were cultivated in Cyprus in bygone days but were destroyed or died out at an unknown period the reason for which no records can be traced.

In 1898, I grafted a chestnut bud on a young oak tree at Pedoulas. The graft succeeded and when I showed it to the then Director of Agriculture, the late Mr. P. Gennadius, he established a nursery garden at Pedoulas for fruit trees and instructed that special attention be given to the production of chestnut trees. Thousands of chestnut plants were issued from this nursery to the villages of Pedoulas, Kykko, Mandria, Kype-rounda, Askas, Saranti, Lagoudhera, Yerakias and other villages.

Unfortunately, however, little attention was given to the after cultivation of the chestnut trees by the villagers, and the hill farmer devoted his activities to earlier bearing and more lucrative fruit trees.

It is generally stated that the chestnut tree does not come into bearing until after the twentieth year of growth; however, in Cyprus I have observed trees bearing after their fourth year of growth. The tree previously referred to which I grafted on to the oak tree bore fruit in its fourth year.

The three old chestnut trees referred to in the first paragraph of this article bear much fruit but the fruit falls off before ripening and only a small quantity remains to fully ripen. The behaviour of these trees has deterred many villagers from giving much attention to the cultivation of new chestnut trees. I attribute this dropping of the fruit to the following reasons:—

1. There is a lack of pollen or a ripening of the male flowers before the ripening of the female flowers.
2. The chestnut may require fecundation with the pollen of another chestnut tree.
3. The trees may be grown on unsuitable soil or do not receive proper cultivation.

Owing to the indifference of the villagers towards the cultivation of the chestnut trees and to the subsequent abolition of the Pedoulas nursery, the cultivation of this tree was practically abandoned.

In the year 1918, I noticed that Cyprus chestnuts were of much better quality than those being imported.

A few trees were supplied to various Pitsilia school gardens and to Trikoukkia nursery and since then a revived interest in the cultivation of chestnuts has taken place.

A small supply of Ardech chestnut seeds were obtained from France in 1919, but as the seeds arrived very late in the season only one plant survived. This tree exists to-day in a garden in Platres.

It is hoped to receive a fresh supply of Ardech chestnut seeds for distribution to school gardens and private lands in order to stimulate further the interest in the propagation of chestnut trees.

The chestnut tree should not have more than two per cent. of lime in the soil constituents; therefore, in Cyprus there are certain areas where the tree will not flourish well.

The areas surrounding the following villages are recommended as suitable for its cultivation.

NICOSIA DISTRICT.—The villages of Livadhia, Vroisia, Kambos, Yerakiæs, Kalopanayiotis, Korakou, Evrykhon, Asino, Nikitari, Platanistassa, Phterykoudhi, Palæokhorio, Pharmakas and Makhæras.

LARNACA DISTRICT.—The villages of Vavatsinia, Odou and Melini.

LIMASSOL DISTRICT.—The villages of Arakapa, Louvara, Apsou, Yerasa, Perapedhi, Phini, Ayios Dhimitrios, Tris Eliæs and Kaminaria.

PAPHOS DISTRICT.—The villages of Mylikouri, Vretsa, Panayia, Asproyia, Sarama, Peristerona and Yialia.

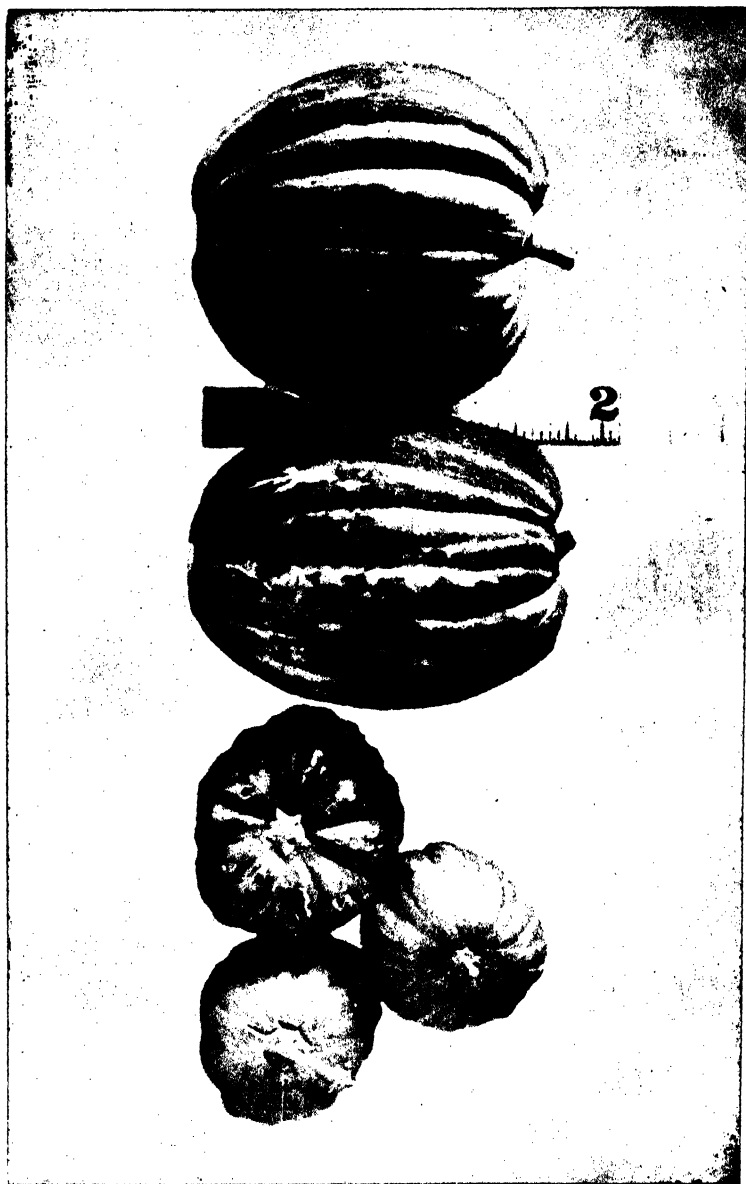
There are also many forest valleys in the hill regions of Cyprus where the chestnut tree would thrive very well.

Exceptional Pumpkin Production.

THE five pumpkins shown in the photograph on page 18 were the production of one plant. Two of them weighed 33 and 32 okes respectively, and the other three had a combined weight of 35 okes, thus making a total of 100 okes all from one plant.

The pumpkin plant which was grown by Mr. G. Frankos, Superintendent of School Gardens, in his private garden, was planted in April on well cultivated and well manured land. Some of the branches were covered with earth after an application of 20 drams of 6.8.8 type of chemical fertilizer. A second application of chemical fertilizer was given after an interval of twenty days and immediately following this second application an extraordinary enlargement of the two fruits produced by the earthed up branches took place. This was no doubt due to the earthed up branches having made additional roots.

If pumpkins can be produced to this extent livestock owners should be able to have a ready supplementary food supply



Pumpkins.

during the dry autumn months when there is usually a scarcity of suitable food.

Arbor Day Celebration, 1928-1929.BY CHIEF CLERK, *Forest Department.*

ARBOR DAY was celebrated in December, 1928, and in January, 1929. The ceremony was carried out by the peasantry on the 16th December, 1928, and on the 30th January, 1929, as fixed by the Director of Agriculture.

In December, 1928, 3,417 persons as well as 79 Forest officials attended the celebration in 80 villages. In January, 1929, 6,057 persons and 84 Forest officials attended the celebration in 73 villages.

The plants issued to the school children and planted by them in 1928 are 15,898. They are as follows :—

Issued by Forest Department .. 2,365 plants.

„ „ Agricultural Department 822 „

„ from School Gardens .. 12,711 „

Total	..	..	15,898	consisting of
Fruit trees	..	..	10,602	
Forest trees	..	..	5,296	

Total	15,898
-------	----	----	--------

The subjoined list shows the various species of trees planted :—

<i>Fruit Trees.</i>				<i>Forest Trees.</i>			
Almond	..	..	4,476	Pinus pinea	..	..	292
Pear	..	..	712	Pinus halepensis	..	..	146
Mulberry	..	..	2,790	Acacia	..	..	819
Apricot	..	..	1,575	Hedge thorn	..	..	10
Plum	..	..	30	Dodonea	..	..	227
Apple	..	..	86	Casuarina	..	..	397
Cherry	..	..	18	Cypress	..	..	1,701
Lemon	..	..	186	Eucalyptus	..	..	1,253
Bitter orange	..	..	373	Persian lilac	..	..	152
Palm	..	..	15	Pepper	..	..	26
Medlar	..	..	6	Carob	..	..	73
Fig	..	..	106	Canary pine	..	..	20
Pomegranate	..	..	74	Juniper	..	..	5
Peach	..	..	100	Shinia	..	..	5
Kentish cherry	..	..	20	Sycamore	..	..	50
Quince	..	..	35	Chestnut	..	..	2
				Walnut	..	..	36
				Ash	..	..	30
				Jacaranda	..	..	2
				Parkinsonia	..	..	50
Total	..	..	10,602	Total	..	..	5,296

In January, 1929, 12,438 plants were issued to the school children and planted by them. They are as follows:—

Issued by Forest Department	..	3,270	plants.
„ „ Agricultural Department	2,115	„	
„ from School Gardens	..	7,053	„
<hr/>			
Total	..	12,438	consisting of
<hr/>			
Fruit trees	..	6,563	
Forest trees	..	5,875	
<hr/>			
Total	..	12,438	
<hr/>			

The subjoined list shows the various species of trees planted:—

<i>Fruit Trees.</i>				<i>Forest Trees.</i>			
Cherry	..	79		Acacia	..	1,581	
Seville orange	..	8		Carob	..	488	
Mulberry	..	1,836		Pinus halepensis	..	178	
Almond	..	2,185		Cypress	..	1,446	
Pear	..	171		Casuarina	..	971	
Bitter orange	..	601		Callitris	..	50	
Chestnut	..	2		Dodonea	..	285	
Fig	..	665		Eucalyptus	..	470	
Peach	..	56		Pinus pinea	..	190	
Apricot	..	524		Albizzia	..	16	
Plum	..	74		Juniper	..	10	
Pomegranate	..	30		Cercis	..	15	
Lemon	..	32		Canary pine	..	2	
Apple	..	263		Washingtonia	..	75	
Vine tree	..	30		Jacaranda	..	15	
Mandarine	..	2		Persian lilac	..	62	
Wild pear	..	5		Walnut	..	21	
<hr/>				<hr/>			
Total	..	6,563		Total	..	5,875	
<hr/>				<hr/>			

The celebration of Arbor Day in the villages and towns has greatly stimulated the desire of raising trees since the system has been adopted.

One feels great satisfaction to see that the Arbor Day is celebrated every year with more enthusiasm.



ANIMAL SHOW, 1929.

Society for the Prevention of Cruelty to Animals.

BY C. NOBLE, M.B.E.

THE second Animal Show held by the Society for the Prevention of Cruelty to Animals was held in the Moat, Nicosia, on Friday, 22nd November, 1929.

The object of the Show in consonance with the aims of the Society, is to encourage the kindly and intelligent treatment of working animals.

The Show was well attended by all classes of the community and the spectators took a keen interest in the proceedings.

His Excellency, the Governor, and Lady Storrs were, on arrival at the Show received by Miss Clowes, Honorary Secretary of the Society, and Mr. Hart-Davis, Commissioner of Nicosia. His Excellency made an inspection of all classes of animals exhibited while judging was in progress.

The Judges were Mr. Surridge, Commissioner, Larnaca, and Mr. Barrett, Manager Stock Farm, Athalassa.

Miss Clowes and the Committee deserve every credit for their organisation as the Show was a very successful one in every respect. Miss Clowes, who is a good horse-woman and is thoroughly interested in animals is leaving the Island shortly. The Society will lose a capable and energetic Secretary.

There were eight classes open for entry as follows :—

1. Pair of horses in carriage.
2. Pair of mules in cart.
3. Single horse or mule in cart.
4. Single horse or mule in cart ordinarily engaged in carting building material or road metal.
5. Horse, mule or donkey in water cart with kouzes.
6. Jack or gelding donkey with straturi.
7. She-donkey with straturi.
8. String of three camels.

All classes were well filled with the exception of the pair of mules in cart class.

There were nine entries in Class 1. All were well horsed by good animals and well turned out. The Judges were fully justified, however, in their selection of first, second and third prize winners.

There were only three entries in Class 2.

There were eleven entries in Class 3 and 14 entries in Class 4. The animals in these classes were in fairly good condition and showed no signs of open sores or bad treatment. The S.P.C.A. has been doing much good work in that direction.

Class 5 in which there were 10 entries was an extremely interesting one, and almost without exception the long two-wheeled carts with their twenty-one kouzes were newly-painted and got up in regular show style.

Class 6 was quite well represented and the eight Jack donkeys shown although lacking in size were of good quality.

There were six entries in Class 7 but the animals shown were poor and in no way representative of the Island.

Class 8 had seven entries. Each string of three camels were a very level lot and the Judges had some difficulty in placing them for prizes. There were no signs of sore backs amongst the lot which is very creditable.

On completion of the judging, the prizes were presented by Lady Storrs. The total prize money amounted to £33. The following were the prize winners:—

No.	Description of Class.	No. of entries.	Prize.	Names of prize winners.
1.	Pair of horses in carriage ..	.. 9 ..	1st ..	Costas Stavrou.
			2nd..	Georgios Christodoulou.
			3rd ..	Costas Hji Georgiou.
2.	Pair of mules in cart .. ..	.. 3 ..	1st ..	Demetris Allameno, Lapithos.
			2nd..	Mehmed Koutchouk, Nicosia.
3.	Single horse or mule in cart ..	..11 ..	1st ..	Kleanthis Kyriacou, Nicosia.
			2nd..	Yangos Katsouris, Lysi.
4.	Single horse or mule in cart ordinarily engaged in carting building material or road metal ..	..14 ..	1st ..	Efthydis Yorgalli.
			2nd..	Philaretos Ioannou.
			3rd ..	Nouri Mustafa, Nicosia.
5.	Horse, mule or donkey in water cart with kouzes ..	..10 ..	1st ..	Nicolas Georgiou,
			2nd..	Michael Georgiou,
			3rd ..	Hajis Hji Toffi.

No.	Description of Class.	No. of entries.	Prize.	Names of prize winners.
6.	Jack or gelding donkey with straturi	.. 8 ..	1st .. 2nd.. 3rd .. 4th ..	Gavriel Costi Lydra, Athianou. Neophytos Vrachimi, Athianou. Ahmed Halid, Nisou. Hassan Hji Ibrahim, Epikho.
7.	She-donkey with straturi	.. .. 6 ..	1st .. 2nd.. 3rd .. 4th ..	Haji Toghlis Hji Vassili. Michael Kyprianou. Sophocles Hji Georgi. Christoforos Varnavides.
8.	String of three camels	7 ..	1st .. 2nd.. 3rd ..	Hji Panayis Hji Toghlis, Morphou. Hutaverti Ibrahim, Ayia Kebir. Mehmed Mustafa, Strongylo.

An extra prize of 10s. was won by Assim Halil Kallika of Nicosia for the best shoe exhibit in class 1.

The Use of Fertilizers in Egypt.

THE following note on the nature, import and use of fertilizers in Egypt, is extracted from a report on the "Economical and Financial Situation in Egypt" by R. M. Turner, O.B.E., published in June last, and will be of interest to readers of this Journal:—

Egypt is an important consumer of fertilizers, and year by year the consumption will increase. Stable manure is rare, as cattle in the country is not abundant and camel manure is used as fuel. The increased use of motor tractors for agricultural purposes in the place of cattle, donkeys and camels will further reduce the supply. Also the use of the ruins of ancient villages (koms) as manure is decreasing, as this manure is not very rich in fertilizing matter and the cost of its transport to the field is often very heavy and disproportionate to its value.

The soil of Egypt requires nitrogen, phosphoric acid and potash. Nitrogen is supplied mostly under the form of:—

Chilian nitrate of soda containing $15\frac{1}{2}$ per cent. nitric nitrogen.

Synthetic nitrate of lime containing 15 per cent. nitric nitrogen.

Sulphate of ammonia containing $20\frac{1}{2}$ per cent. ammoniacal nitrogen.

Cyanamide of lime containing $15\frac{1}{2}$ per cent. amide nitrogen. and other German and American compound fertilizers which are on trial such as ammo-phos, nitro-sulphate of ammonia, etc

Phosphoric acid is supplied under the form of simple super-phosphate of lime containing 16-18 per cent. of soluble phosphoric acid, and concentrated phosphate of lime containing 38-40 per cent. of soluble phosphoric acid. The quality generally imported is the 16-18 per cent., other grades being little in demand.

Potash is supplied under the form of potash containing 48 per cent. of sulphate of potash.

Chilian nitrate of soda, which was introduced to this market some 25 years ago, remains the largest seller in Egypt, imports into this country during the year under review amounting to 188,077 metric tons valued at £E.1,800,994, representing an increase in value of some £E.372,000 compared with 1927. A fixed price for this commodity has been established up to the end of June, 1929, when the conditions may eventually be altered, the nitrate year being from the 1st July to the 30th June.

Some traces of nitrate of soda are found in Upper Egypt (Kena district) under the form of "tafla" containing about 5 per cent. to 8 per cent. of nitrogen, but although it is used locally the quantity extracted is limited and the process of extraction and transport to the field are expensive.

The only serious competitor to Chilian nitrate, now that the Norwegian granulated nitrate of lime has been withdrawn from this market, is the German nitrate of lime marketed by the Stick-stoff Syndikat, who offered their 15 per cent. nitrate at prices much below quotations for Chilian nitrate of soda either on consignment or on long credit terms. This, together with extensive propaganda and the unsatisfactory financial conditions of the fellah during 1926 and 1927, induced him to accept the tempting credit terms offered in spite of his preference for nitrate of soda and for the Norwegian product.

Sulphate of ammonia is imported partly from the United Kingdom but mostly from Germany, total imports in 1928 being 4,480 metric tons valued at £E.47,832.

The other nitrogenous fertilizers of German or American origin are only imported in very small quantities by large land-owners for trial purposes. Nitrogenous fertilizers are used for wheat, maize and sugar cane crops, and on a small scale for cotton and vegetables in top-dressing.

Cyanamide of calcium containing $15\frac{1}{2}$ per cent. of nitrogen under its amide form is little used in Egypt at present. It is mostly imported from Italy, the United Kingdom and Roumania.

Superphosphate of lime under the 16–18 per cent. phosphoric acid form is said to have a good future in Egypt. The annual import is about 40,000 metric tons, mostly from Holland, France and Algeria. British, Belgian and Greek supplies appear to have gone out of the market. Belgium supplies small quantities of concentrated superphosphate of lime (38–40 per cent.). There exists a small local factory of superphosphate of lime in the Suez area, where rock phosphate of Kosseir is used and sulphuric acid is obtained from the waste of the petroleum refineries at Suez. There are also very rich phosphate grounds on the strip of land between Keneh and Kosseir. The latter beds are exploited for export to Australia and Japan, but the Sabain (Kenah) works were not so successful owing to the great expense involved in hiring of native craft to transport the goods to Alexandria. These grounds belong to a local company connected with the Montecatine works.

Sulphate of potash, containing 48 per cent. of potash (K_2O) is imported in increasing quantities by the Franco-German Potash Syndicate (Kali Syndikat) of Stassfurt, who have instituted considerable propaganda. Formerly it was held that the Nile water and the Egyptian soil contained sufficient potash for the country's requirements, but as cultivation becomes more extensive it is anticipated that imports will increase considerably. Up to the present compound fertilizers have hardly been tried in Egypt.

It is anticipated, in view of the facts that all crops are not yet manured with chemical fertilizers and that the vast irrigation schemes in course of execution and under examination will result in extensive new areas of lands coming under cultivation, that before many years have passed Egypt may well have to use 300,000 tons to 350,000 tons of nitrogenous fertilizers, 100,000 tons to 150,000 tons of phosphoric acid fertilizers, 25,000 tons to 50,000 tons and even more of potash per annum.

The Egyptian Government legislation controlling the fertilizer market should go far towards removing abuses, but the inadequate storage accommodation at the Egyptian customs has aroused very adverse criticism in local circles. This latter disadvantage will, it is hoped, be removed before long, as the construction of new nitrate quays is one of the first items on the programme for the extension and improvement of Alexandria harbour.

EDITORIAL AND ADVERTISEMENT NOTICES.

All communications for publication should be addressed to the Editor "Cyprus Agricultural Journal," Department of Agriculture, Nicosia.

Communications are invited, written on one side of the paper only. It should be understood that no contributions or specimens can be returned unless postage is prepaid.

Copies of the "Cyprus Agricultural Journal" can be obtained on application to the District Commissioners, or to the Department of Agriculture, price 3*cp.* per number, or by post 3½*cp.*

Annual subscription payable in advance 12*cp.* for residents in the six District towns; outside the District towns 15*cp.*; overseas subscription 18*cp.* (2/-).

SCALE OF ADVERTISEMENT CHARGES.

A uniform reduced rate is charged for all advertisements which covers their insertion in the English, Greek and Turkish issues respectively.

As special efforts are now being made to increase the circulation of the Journal in the Colony and Overseas it may be regarded as a valuable medium for advertising.

The following are the rates in force :—

COVER—Full page, 1 year or 4 insertions	...	£2 15 0
INSIDE PAGES—Full page, 1 year or 4 insertions		2 8 0
" Half page "		1 4 0
" Quarter page "		12 0

For one insertion only, one-fourth of above charges.

All charges payable in advance.

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For Wants, Articles for Sale or Exchange, Notices of Meetings, Events, etc., for the first 16 words, 2*s.* Exceeding 16 words but not exceeding 32 words, 4*s.* For every additional 8 words 6*cp.*

These charges include insertion in the English, Greek and Turkish issues.

Advertisements should be written on one side of the paper only, and should reach the Editor, "CYPRUS AGRICULTURAL JOURNAL" at least 15 days before the date of issue.

The "Cyprus Agricultural Journal" is published in January, April, July and October, on or about the 15th of the month.

The Editor does not necessarily endorse the statements or opinions expressed in contributed articles, the responsibility for which rests with the authors.

Curious Colocynth Fruit.

AMONGST the Colocynth fruits shown on the photograph below will be noticed one very large fruit whilst all the others are of small and uniform size.



Colocyths.

The large fruit has a girth of 20 inches and weighs 2 lbs. 12 ozs. whilst the smaller fruits have an average girth of 8 inches and weigh 3 ozs. only, this being the average size and weight of the Colycinth.

No definite explanation can be given as to the difference in size, but it has been suggested that cross fertilization may have taken place with a water-melon.

The pulp and the seed of the large fruit resemble those of a water-melon.

There is a common belief in the Island that similar cross fertilization takes place with cucumbers and water-melons.

Species of Locusts and Grasshoppers found in Cyprus.

FURTHER investigations carried out during the past season have brought additional information to light as to the species of locusts and grasshoppers occurring in Cyprus, and it is necessary to correct some parts of the article entitled "Investigations into the locust plague in Cyprus" which was published in this Journal, Vol. XXIV., Parts 1 and 2, January and April, 1929.

The locusts met with in Cyprus are :—

(a) *Doclostaurus maroccanus*, Thunb., also known as *Stavro-notus cruciatus*, Charp., the Moroccan locust, commonly known in Cyprus as the "true locust."

(b) *Calliptamus italicus*, L. the Italian locust, commonly known in Cyprus as "Tsacroacrida."

A number of other species belonging to the family Acridiidae (short-horned grasshoppers) also occur abundantly, amongst which may be mentioned *Thisacetrus littoralis*, Charp., *Oedipoda minimata*, Pall., *Aiolopus strepens*, Latr., *Pyrgomorpha conica* Ol., *Acrida turrita*, L., *Platypterna pruniosa*, Br-W., *Anacridium ægyptium*, L. The species known locally as the Syrian locust is *Schistocerca gregaria*, Forsk. (*peregrina* Ol.), the desert or migratory locust.

Amongst the Tettigoniidae (long-horned grasshoppers), there are also some species which are at times destructive, known locally as "searnos" and "vrouchos."

These species include *Tettigonia viridissima*, L. (vrouchos), *Decticus albifrons*, Serv., *Metriopetra intermedia*, Serv.

The identifications given above have been made by the Imperial Bureau of Entomology, most of them during 1929.

In the same article the term "Tsacroacrida" is used for both *Calliptamus* and the Tettigoniidae, the latter species being also erroneously referred to as locusts.

The references to "Tsacroacrida" on pages 15, 54 and 55 of that article refer to Tettigoniidae.

Mandarins.

THE production of mandarin fruit in Cyprus is prolific. The photograph below shows the productiveness of this fruit tree.



Mandarins—a prolific branch.

The tree from which the branch was taken was raised from seed and has not been grafted. There were thirty-eight fruits

of uniform size and very good flavour on this small branch and this year the tree bore over three thousand fruits.

There are possibilities for growing mandarins in Cyprus on a big scale for export were there a demand for them.

Agricultural Demonstration Plots.

DURING the year 1929 the Department of Agriculture has maintained 311 Agricultural Demonstration Plots in the various districts as follows :—

Nicosia	..	..	..	..	..	..	91
Paphos	..	..	..	..	..	..	67
Famagusta	..	..	..	..	..	..	57
Larnaca	..	..	..	..	..	..	40
Limassol	..	..	..	..	..	..	39
Kyrenia	..	..	..	..	..	..	17
Total	..	..	..	..	..	..	311

Of the above number of plots, 103 are being abolished for various reasons, of which the chief are expiration of contract and indifference of owners. In place of those plots being abolished the Department of Agriculture has made arrangements for the establishment of 35 new plots.

In the past these Demonstration Plots have served a very useful purpose in demonstrating to the villagers improved methods of husbandry. A gradual advancement in agricultural methods is taking place and in the more progressive areas the need for so many demonstrational plots is not so apparent hence the reason for the reduction in the number of plots to be maintained in 1930.

The alteration in policy in this direction is being brought about gradually and the objects in view for which these demonstration plots are intended to serve in the future are as follows :—

(a) To demonstrate improved method of agriculture in backward areas.

(b) To demonstrate methods of cultivation of newly-established crops to the Island or new to certain areas.

(c) To demonstrate any new or more up-to-date method than that generally practised.

(d) To lay down model plots in areas where settlement is projected or certain crops are being cultivated extensively.

In addition to the Demonstration Plots the Department of Agriculture has carried out demonstrational prunings all over the Island and in all 235 donums of vineyards have been demonstrationally pruned as well as 18,730 trees of various kinds,

Production of Groundnuts in Cyprus.

GROUNDNUTS are grown in small quantities in Cyprus, the Kyrenia District being the chief producing area. The production, however, does not supply the local demand and, as will be seen from the following statement, fair quantities are imported.

Statement showing the imports of groundnuts into Cyprus, 1922-1928 :—

Year.	Quantity. cwts.	Value. £
1922 ..	1,164	1,822
1923 ..	349	475
1924 ..	1,576	1,970
1925 ..	3,292	3,804
1926 ..	3,099	3,061
1927 ..	3,682	4,083
1928 ..	4,442	4,773

The local varieties at present grown are planted in April and harvested in October. The crop receives two to three hoeings and is usually irrigated every twelve days. The estimated yield is two to three hundred okes per donum.

The Department of Agriculture conducted trials last year to ascertain if groundnuts can be grown in suitable sandy soils during the rainy season to ripen in the beginning of the dry season without irrigation. The results of these trials were a failure owing to non-germination due to the cold weather.

There is no reason why, if farmers planted groundnuts more extensively, production should not meet the local demand and in fact an export trade be created.

For an export trade, growers and exporters are advised to concentrate their activities on a variety which would find a market for confectionery purposes in preference to those varieties grown for the expression of oil.

Such a variety recommended as suitable for Cyprus is the Valencia groundnut. A small supply of the best Valencia groundnut seed was imported by the Department of Agriculture and tried out in the Kyrenia and Famagusta Districts last year and the following results were obtained from the experiment :—

District.	Date planted	Number of irrigations.	Date harvested.	Yield per donum.
Kyrenia ..	19.5.29	10	7.11.29	70 okes.
Famagusta	23.5.29	15	25.10.29	140 „

The trials on the whole were satisfactory for an introduced new variety and although the yield was much lower than that for local seed, the quality of the Valencia nut was better.

The low yield in the trials are chiefly accounted for owing to improper spacing. They were rather widely spaced, sufficient attention was not given to the upright character of the Valencia type.

The resultant seed is being used for further trials and seed production.

DISTRICT NOTES.

By the Commissioner, Kyrenia.

Review of Agriculture in Kyrenia District for the Year 1929.

ON the whole the year 1929 has been satisfactory to the farmer, rain falling in proper season, with the exception of an unexpected storm on June 1st which caused a certain amount of damage to corn on the threshing-floor. Unfortunately on November 27th the district was subjected to an unprecedented deluge, $5\frac{1}{2}$ inches of rain falling in five hours. This storm caused a great deal of damage, destroying young corn, uprooting fruit trees, carrying away whole gardens and covering cultivated land feet deep with rocks and stones. Tons of top soil were taken into the sea and at no time in the life of the farmer has he so realised the expediency of planting trees to prevent his land being washed away. To add to his troubles, communication between villages and Headquarters was temporarily suspended. However, despite this setback to any progress that has been made during the year, the farmer is still optimistic for the future. It is largely due to the real encouragement, activity and interest of the Agricultural Department, that growers are being brought into closer touch with buyers and overseas markets, and that in most cases prices are better.

The Nursery Garden is a well cared for plot of land, planted to many varieties of fruit saplings, and it is now in possession of a regular and good water supply.

3,297 plants and trees were issued on payment.

16,320 plants and trees were issued free.

14,250 plants and trees are now available for issue.

The site for the experimental and demonstration garden at Lapithos is being planted out to grape fruit, and to limes of the Sierra Leone and Dominican varieties.

Existing School Gardens show great improvement, and many new ones have been established. These gardens are looked upon by the villagers as sub-nursery gardens and are being used accordingly.

Special mention is made of the following crops :—

WHEAT.

126,283 kilés have been produced in this district this year at a varying price between 5s. and 6s. per kilé. In comparing the above quantity to the yield of last year, I find that this year's production exceeds that of 1928 by 11,593 kilés. On the other

hand this year's harvest is less than that of 1927 and 1926 by 15,453 at 7s. and 8s. and 11,894 at 6s. and 9s. per kilé respectively. It will be seen from the above that the price of this year is lower than that of the two preceding years, which is probably due to the importation of foreign flour rather than to the over production of the product in question.

OLIVES.

As forecast in the last quarterly report, olives are plentiful and the price is low. It is unfortunate to record that more than 40 thousand oles were destroyed by the storm on November 27th.

CAROPS.

The yield of this product is considerably less than that of last year and the price lower than the two preceding years.

CAROB SYRUP.

No reference to this syrup has been made before in any report from this district, but it should be mentioned now as enquiries regarding it have been received from England where samples have been tested and proved satisfactory. I have ascertained that a regular supply may be procured from this district, and it is hoped before very long there will be a regular demand for this commodity from the United Kingdom. Reference has been made to the possibility of an adequate supply. Until it is known how much is required, it is impossible to answer this question. Efforts have been made to obtain a suitable and attractive syrup-jar from local potteries, but so far the potter has been unable to produce anything quite satisfactory owing to his inability to make a tight fitting lid.

CITRUS FRUITS.

Citrus cultivation in this district is confined to an area of 15 miles on the north side of Kyrenia range between Vasilia and Bellapaise. The average production of lemons up to the end of the year 1928 was about 12 millions per annum. It should be pointed out, however, that the production of this year is considerably less than previously due to the prevalence of Red Scale, lack of cultivation and over irrigation. It is, however, satisfactory to note that 25 per cent. of citrus producers have planted and grafted more citrus fruits than heretofore and in this connection there is every sign of a steady increase in the future. Moreover, villagers are beginning to pay greater attention to the care of their trees and adhere to modern methods of cultivation. With regard to the production of mandarines, sweet and Jaffa oranges, the latter is on the increase, and I think it reasonable to assume that this district will produce in the near

future a sufficient quantity for export. The area devoted to citrus cultivation as above mentioned is very small, but owing to the suitability of the soil and a plentiful supply of water, I see no reason why the cultivation of all citrus fruit should not be extended (every effort is being made in this respect) along the whole part of the district, north of the Kyrenia range, a distance of some 50 miles. It was hoped that by the arrival of Kia Ora, Ltd., growers would have a regular demand for their lemons. This would have been so had producers given the Company their entire support instead of withholding the greatest part of this fruit in the hope of obtaining a higher price than the Company could afford to pay. Due to this lack of support and the high cost of transport, Kia Ora had no other alternative than to cease operations in the Island.

In my report for the June quarter, reference was made to an intermediate lemon crop, known as "Verdelli" gathered in May and June. I have carried out the experiment in my own garden and blossom appeared in September. It now remains to be seen whether the tree will bear fruit in May or June. If this is so, I intend to encourage the production of this intermediate crop throughout the district.

TOBACCO.

Great strides have been made during the year under review in the production of Latakia and Cigarette leaf, though there is still room for improvement especially with regard to the latter. It is satisfactory to note that some planters have not only doubled their output but have greatly improved the quality of the leaf. It is still uncertain which part of the district should be devoted to the fumigated tobacco or the yellow leaf. Kyrenia is fortunate in having its principal buyer living at Kyrenia town. He has given valuable advice and every encouragement to producers, and there is every indication of a steady improvement in quality and quantity. Even though there is a marked improvement in the quality of tobacco produced this year, the planter is still discouraged by being exploited by the middle men. However, a register of planters is in the course of formation and I hope to make arrangements during the next year by which the producer may have some protection.

Seedbeds are in the course of preparation for next year's crop.

COCOONS.

The production this year is less and on the whole not very satisfactory. This is due partly to adverse climatic conditions, but principally on account of inadequate accommodation for the worm, lack of ventilation and ignorance of the peasant.

The Managing Director of the Silk Filature, Paphos, stayed in this district for over a fortnight, during which time he purchased cocoons from members of Co-operative Credit Societies, although he met with great difficulties as higher prices were being offered locally. I have taken every opportunity of persuading villagers to support the Silk Filature, and I hope that as the Co-operative Credit Society movement spreads, so will the people realise the value of co-operation.

KONARI.

The production of onions and onion sets this year has been about the average. Experiments have been made with specially imported seed of three varieties. Two sample sets of each variety have been forwarded to the Agricultural Department, and it is hoped that these varieties may be more extensively grown.

GROUNDNUTS.

There has been no appreciable increase in the production of the Cyprus nut this year and it is being sold locally at the usual high price. Experiments have been carried out with the "Valencia" nut. The yield is low compared with the Cyprus nut. This is due to the fact that the farmer did not take the trouble to "heel up" the plants as they matured. There is no doubt that this nut is vastly superior to anything of the sort previously produced here, and if it is cultivated intelligently, should be a really profitable crop.

VINES.

Two experimental vineyards were planted at Kato Dikomo and Ayios Ermolaos. I have noticed that new vineyards have been planted at other places in the district, and there seems a movement afoot to revive an old industry. Agricultural lectures have been held on Sundays at a number of villages. These lectures were well attended and afterwards the people were taken to an adjacent garden where practical demonstrations were carried out. It is encouraging to note that instructions given on these occasions, are to some extent being put into effect. I am hoping to be able to arrange other lectures during the coming year.

Mr. Cayley, the Rat Expert, visited the district on the 29th October for the purpose of advising people as to the best methods of destroying this pest and eventually exterminating it.

I hope to be able to form a District Agricultural Society early in the coming year, and I am of opinion that this step will eventually encourage the spirit of co-operation so lacking at the present time.

Canning Fruit by Hand.

BY P. NEWMAN.

THE canning of fruit has, until recently, been entirely confined to large manufacturers using machinery costing several hundreds of pounds and, therefore, necessitating a very large output in order to make a profit on the capital expenditure.

Within the last few years a machine for sealing cans by hand has been introduced and has been used in the United States and England by those who wish to preserve fruit on a smaller scale.

A short description of this machine was given in the Cyprus Agricultural Journal for July, 1928.

As a result of this article, one of these machines was procured by the writer from England and after an experience of one year has proved entirely satisfactory.

The advantages of this machine are its low cost and its simplicity. No solder is used for sealing the can, which is hermetically sealed in the method described below.

The operation takes only half a minute. The actual sealing of the can is, therefore, only a small part of the operation of canning. Before describing the whole process it is desirable to consider the main principles of fruit preserving.

Fruit, if not preserved, will decompose owing to the action of various bacteria which are ever present in the air and which under suitable conditions multiply with amazing rapidity.

If the fruit be sterilized or freed from the action of this bacteria no decay can take place and it will remain indefinitely in the same condition. Bacteria can be destroyed by heat and the object of canning is first to prevent any bacteria from entering the can by sealing it hermetically, and secondly to destroy, by heating, the bacteria already in the can after it has been sealed.

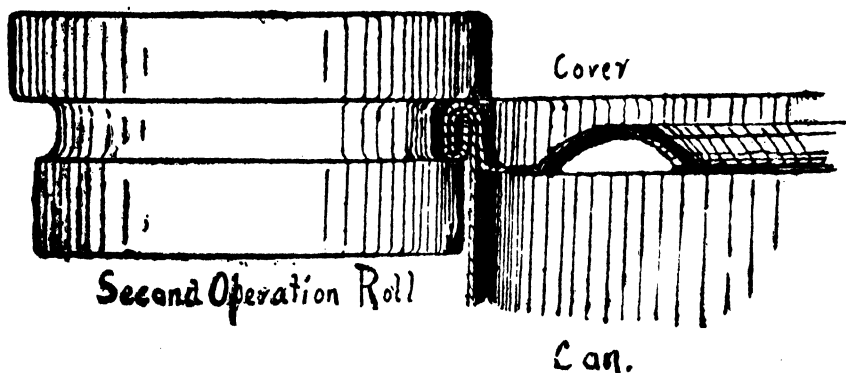
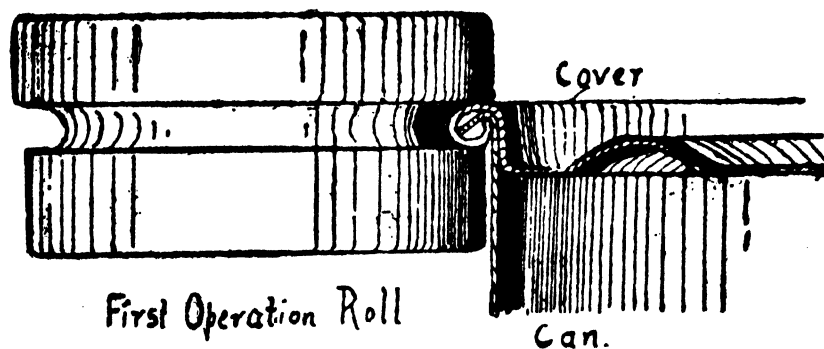
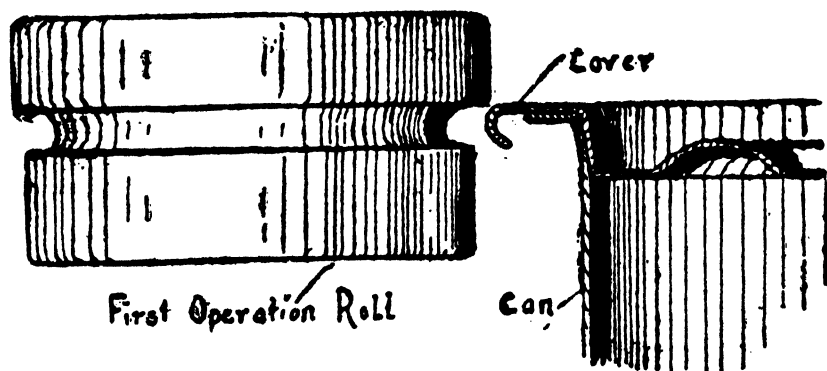
The method of carrying out these principles is as follows :—

1. *Grading.*

Good results can only be obtained if the fruit used is carefully graded before being placed in the cans. Uniformity in ripeness, in size and in colour should be aimed at. Inferior or over-ripe fruit should not be used for canning.

2. *Packing.*

The fruit is prepared for packing in the cans according to the directions given below for the different varieties. The fruit is then packed as tightly as possible into clean cans but without using so much pressure as to bruise the fruit. Cans coated with acid-resisting lacquer should be used, if possible, for coloured fruits, otherwise bleaching of the fruit takes place.



Top : Position of 1st operation roller. Centre : Can and Lid after the 1st operation. Bottom : Completion of Sealing the Can.

3. *Syrup.*

Although fruit may be preserved satisfactorily in water, it will be found that by using a solution of sugar and water as a covering liquid, much better results will be obtained. Syrup helps to retain the fresh fruit flavour and to maintain the natural colour. A suitable syrup for most fruits is one oke of sugar to one oke of water. This may be varied with different fruits according to taste. One oke of sugar and one of water will fill about four cans of fruit of the 2 lb. size. The syrup must be

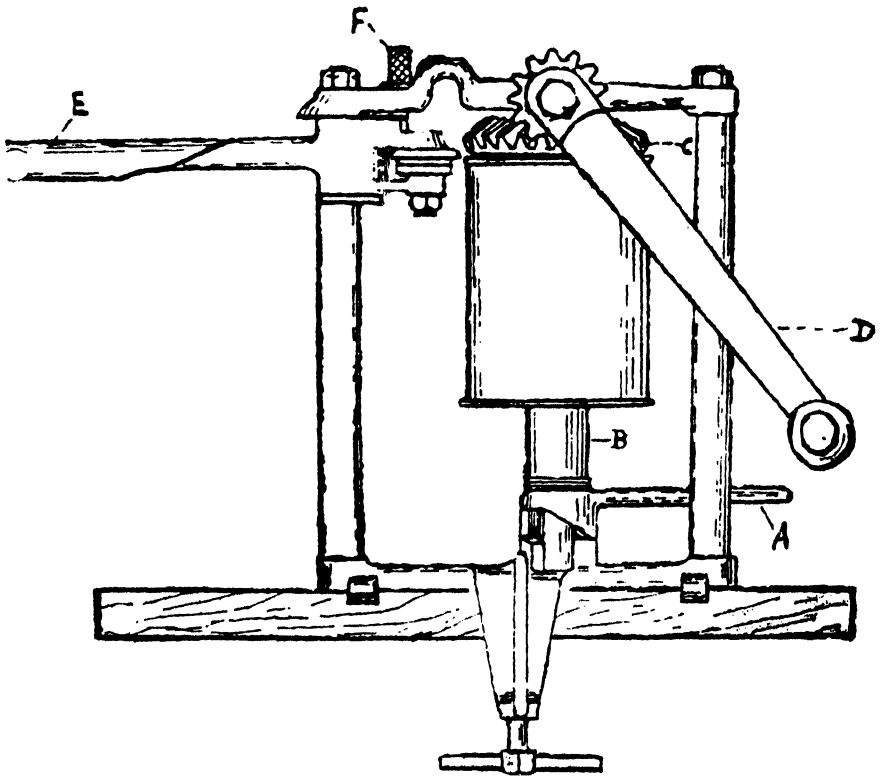


Diagram of Hand Power Can-Sealing machine, with can in position for sealing. (A) Can Lever. (B) Bottom Plate. (C) Top Plate. (D) Handle. (E) Operating Lever. (F) Stop.

boiling and sufficient poured into each can to cover the fruit and fill the can to the brim. The can should then be sealed before the syrup has time to cool. It is better to seal each can immediately after filling it with syrup.

4. *Sealing.*

The filled can with the lid in position is placed on the bottom plate of the machine and clamped by turning a cam lever. In this position the top plate fits into a recess on the lid and holds

it firmly in position on the can. The can, having been locked, is made to revolve by turning the handle as rapidly as possible. As soon as the can is revolving the operating lever is pushed away from the operator with the left hand until the first roller presses gently against the edge of the lid. Pressure is applied steadily and firmly until the roller comes up against a stop after about 24 revolutions of the handle. The operating lever is then pulled towards the operator until the second roller is brought against the edge of the lid. Pressure is applied until the second roller comes against the stop. Sealing is then complete.

5. *Sterilizing.*

When a batch of cans has been sealed, they are sterilized by being placed in a vessel of boiling water. The water which in consequence is slightly lowered in temperature is again brought to the boil and the cans are boiled for 15 to 60 minutes according to the kind of fruit and the size of the container. For stone fruits in 2 lb. cans, which is the most convenient size, it will be found sufficient to boil the cans for 30 minutes. A convenient way of sterilizing is to use an ordinary paraffin tin which will hold eight cans of the 2 lb. size. The tin must be provided with a loose false bottom to prevent the lower cans from touching the bottom of the tin.

6. *Cooling.*

As soon as the cans are sterilized they should be cooled by being placed in cold running water or in a tank. Quick cooling is necessary to prevent the fruit from being over-cooked. After cooling the cans should be thoroughly dried and stored in a dry place to prevent rusting.

The following notes on the preparation of various fruits before they are packed in the can may be found useful.

CHERRIES.

Cherries should be of good size, fleshy and full of flavour. Black cherries are better than the white varieties. Cherries, when canned, are apt to lose colour and flavour. They are, however, very suitable for mixing in fruit salad.

PLUMS.

The large red plum gives excellent results when canned. The fruit may be packed whole, but it seems better to halve them and remove the stones.

APRICOTS.

Sound fruit, not too ripe, should be selected. The fruit is halved and the stones removed. The skin of the Cyprus apricot and kaisha is tender and it is not necessary to remove it.

PEACHES.

The fruit should be firm and not too ripe. The skins must be removed and this is made easier by dipping the fruit for a

few seconds in a boiling solution of caustic soda, about one ounce of caustic to four okes of water. After peeling, the fruit is halved and the stones removed. The latter operation is much easier if fruit of the "free stone" variety is used.

GRAPES.

White muscatel are a good variety for canning. The fruit is stripped from the bunch and shaken down into the can. A thin syrup of half an oke of sugar to one oke of water is sufficient.

APPLES.

The best apples for canning are the cooking varieties which are fairly acid. The fruit should be peeled, cored, quartered and cut into slices. As apples quickly turn brown when exposed to air after being peeled, they should be placed in a weak solution of salt and water. The slices, when ready, should then be washed in cold water and steamed for about five minutes until they are soft enough to be packed tightly into the cans. The cans are then filled with boiling water, without sugar, and sealed at once.

ORANGES.

Either sweet, sour or mandarin oranges may be canned. The fruit is peeled, divided into its natural sections and the pips removed. They are particularly useful for mixing with fruit salad.

FIGS.

The large purple fig which ripens towards the end of September gives excellent results. The fruit should be firm and not over-ripe or bruised. The figs should be peeled, cut into halves and packed tightly. The small green figs with tender skins may be canned whole.

The canning of fruit as described above is not difficult and seems particularly suitable for Cyprus where fruit is cheap and plentiful. The cost of the appliances is not excessive and canned fruit may easily be made at a lower cost than the imported article. It would be of value to hotels, schools and similar institutions for canning fruit for their own consumption as well as to fruit growers for making a profitable use of their surplus fruit.

The cost of the sealing machine is £3. The cans, lacquered inside and holding 2 lbs. nett can be obtained from the manufacturers in England at a cost which works out at two and a half to three piastres per can including duty and freight. The larger the number of cans ordered at one time the cheaper they will be.

The sealing machine can be seen and its use demonstrated to any who are interested by making an appointment with Mr. P. Newman, at Kyrenia, who will also be glad to answer any requests for further details on the subject.

The Characteristics and Culture of Turkish Tobacco.

BY G. MILLS.

(Continued from the July issue.)

FERMENTATION.

OWING to the increase in temperature at the approach of the heat of the summer, and to other causes of a scientific nature, certain organic transformations and chemical reactions take place in the tobacco after the leaves are manipulated and packed in bales.

As a result the fermentation develops certain flavours to the leaf which imparts very desirable qualities, such as improvement in the colour, the disappearance of any "greenish" tendency in the leaves, a riper and more lively body to the tobacco, and an increase in aroma. In fact there is a marked improvement all round in flavour and smoking characteristics. Unfermented tobaccos, as has been customary to produce in Cyprus, can only be considered as undesirable and until the supply of fermented tobaccos is established, there can be little hope of success in supplying the markets abroad.

Certain favourable conditions are required before the actual fermentation will take place, the most important of which is the proper amount of moisture in the leaf. For example, bales of tobaccos containing an excess of moisture should be opened periodically to allow evaporation to the right degree. If too little moisture, then the floors of the store should be occasionally sprinkled with water, although a perfectly weak and dry leaf, such as that produced by irrigated tobaccos, will never ferment.

When the fermentation begins, the process makes its presence known by an increase in the temperature of the bale, at times it reaches such a point as to become very hot indeed.

In order to obtain the best results during the time of fermentation, the handling of the bales is a very important matter and requires careful attention.

The following is the usual manner:—During the first fortnight rest the bales on the thin sides lengthways, the next fortnight on the ends vertically, and the last fortnight on the thin sides again but piled in two rows one above the other. The fermentation is well over by that time and the bales are ready for export and use in manufacture.

(THE END.)

NOTICE.

GOVERNMENT Stud Animals will be stationed as follows until further notice :—

Stallions.

Name or number.	Where stationed.
TEMERAIRE	Athalassa
BLAWBARE	do.
WATERKOSCIE	do.
PLYMOUTH ROCK	do.
MOLESKIN	Larnaca.
PITCHFORD	Famagusta.
DOLMA BAGCHE	Ayios Theodoros.
MAZARIN	do.
CORBY BRIDGE... ..	Yialousa.
MILLSTREAM	Rizokarpaso.
CANTERBURY	Lefkoniko.
LIFE LINE	Vatili.
AULD AITS	Paphos.
LLWYNOG'S MODEL	Polis.

Bulls.

No. 85/374 Half Bred...	Kyrenia. Mr. Haralambides.
„ 102/391 Native	Vatili.
„ 105/394 Shorthorn... ..	Athalassa.
„ 126/415 Native	Rizokarpaso.
„ 127/416 do.	Athalassa.
„ 128/417 Half Bred	do.
„ 132/421 Native	Polis.
„ 133/422 Dutch Bull	Athalassa.
„ 134/423 Half Bred	do.
„ 135/424 do.	do.
„ 137/426 Native	Paphos.
„ 138/427 Ayrshire	Larnaca.
„ 139/428 do.	Agricultural Dept., Nicosia.
„ 140/429 Native	Lefkoniko.
„ 141/430 Half Bred	Athalassa.
„ 142/431 Native	Yialousa.

Jack Donkeys.

No 31	Athalassa.
„ 32	Yialousa.
„ 35	Athalassa.
„ 38	Rizokarpaso.
„ 39	Ayios Theodoros.
„ 40	Larnaca.
„ 41	Polis.
„ 42	Athalassa.
„ 44	Vatili.
„ 45	Paphos.
„ 47	Famagusta.
„ 48	Athalassa.
„ 49	do.
„ 50	Lefkoniko.
„ 51	Athalassa.

The Cyprus Agricultural Journal.

A QUARTERLY REVIEW
OF THE
AGRICULTURE, FORESTRY, AND TRADE OF CYPRUS.

Vol. XXV., Part 2.

APRIL, 1930.

Price 3cp.

EDITORIAL NOTES.

THE continuation of wet conditions up to the end of February tended to make the crop prospects, especially for cereals, rather gloomy. A decided improvement early in March has altered the position, and prospects, on the whole, are satisfactory for most crops.

* * *

The Cyprus Government has forwarded to the Secretary of State for the Colonies for submission, if approved, to the Colonial Development Advisory Committee for consideration, a scheme for a grant of £26,000 from the Colonial Development Fund for the agricultural development of the Colony.

The scheme is designed to provide for the replacement of primitive agricultural implements by modern agricultural machinery and implements and to improve the conditions generally for the production and marketing of cereals.

Provision has been made for the purchase of 12 portable power threshers, 12 tractors with tractor implements, 24 hand grain dressing and cleaning machines and three power grain cleaning plants for installation at the ports.

The Agricultural Department are prepared to put the scheme in operation immediately, should the grant be approved.

* * * *

The world's over-production of cereals affects the Cyprus farmer in much the same way as it affects the farmer in the United Kingdom. Home production is not sufficient to meet the demand for flour and imported flour is favoured in preference to flour milled from home-grown grain.

The problem of how to dispose of the surplus stocks of wheat and barley, and in fact, the whole future of the production and marketing of cereals, requires serious consideration.

As regards wheat, the solution would appear to be an increased use of Cyprus flour for Cyprus bread and that depends largely on the demand of the populace for bread made from flour milled from Cyprus grown wheat.

This question has been fully investigated by the Department of Agriculture and readers are referred to the leading article of the April "Agricultural Supplement" for a full study of the situation.

For regaining the export trade in barley, an improvement in the threshing method is indicated, and the scheme submitted to the Colonial Development Advisory Committee, referred to in these notes, if approved will, it is hoped, overcome the difficulty.

* * * *

In connection with the Government scheme for the improvement and extension of agricultural education in the rural schools of the Colony, the first step has now been taken.

On Monday, the 10th March, the Colonial Secretary and others addressed, at the "Magic Palace", the candidate schoolmasters on the occasion of the inauguration of the agricultural training of schoolmasters.

For this training a special syllabus has been drawn up for a special year's course and suitable provision has been made for practical instruction and training.

The classes are at present being given at the "Magic Palace" Cinema Hall, kindly lent to the Government, free of charge, by Mr. N. Kyprianou, whilst arrangements are being completed for the building of a suitable Lecture Hall at the Headquarters of the Agricultural Department.

* * *

The imposition of new duties by the Greek Government on the import of potatoes into Greece, has caused some concern amongst potato growers in Cyprus.

The new duties, it is feared, will have an adverse effect on the potato export trade.

The Cyprus Government have made representations to the Greek Government for the reduction or removal of this increased duty. Meanwhile enquiries are being made in regard to new markets, particularly as to the possibilities of marketing potatoes in Great Britain, and also Malta, which imports large quantities from foreign countries.

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The Prospectus for 1930-31, also Principal's Report for 1928-29 and Register of the Imperial College of Tropical Agriculture, have been received. A copy of this booklet may be seen by those interested on application to the office of the Director of Agriculture.

The objects of the College are to provide training in the science and practice of tropical agriculture to students intending to become tropical planters, agricultural administrators or officers, or specialists in different branches of agricultural science and technology, and to offer facilities for the study of tropical agriculture to graduates of other colleges and universities. An increasingly important feature of the College is the provision for research and investigation work which its laboratories and fields afford.

The College buildings and laboratories are situated in spacious grounds at St. Augustine, seven miles to the eastward of Port of Spain, Trinidad. Applications for admission to the College should be addressed to the Registrar, the Imperial College of Tropical Agriculture, Trinidad, or to the Secretary, 14, Trinity Square, London, E.C. 3, from whom all particulars may be obtained. Students must have attained the age of 17 years before the date of their admission.

* * *

The Cyprus Trading Corporation of Nicosia, in co-operation with the Director of Agriculture, arranged demonstrations and trials with a Caterpillar-Ten tractor in the morning and afternoon of Wednesday, April 2nd.

The trials took place on lands leased by the Agricultural Department from the Kykko Monastery at Metochi.

The demonstrations were conducted by Mr. R. Randanne Vazeille, representative of the Caterpillar Tractor Company of California, in the presence of the Colonial Secretary, the Abbot of Kykko, the Director of Public Works, the Director of Agriculture and various officers of the Agricultural Department and a large number of interested spectators.

As the trials were conducted in land adjoining that in use for practical demonstration in the scheme for the agricultural education of candidate schoolmasters, they received the full benefit of witnessing the trials.

Spectators were impressed by the manner and ease in which the tractor was turned at the end of the furrow and the clean finish given to the ploughing. The demonstrations made in crossing ditches indicated the mobility of this tractor.

* * *

The hatching of locusts occurred rather earlier this year than in 1929, and consequently the purchasing centres were opened at somewhat earlier dates. Centres are now open at the following villages:—Famagusta District.—Phrenaros, Sotira, Akhna, Kontea, Lapathos, Chatos. Larnaca District.—Pyla, Athienou. Nicosia District.—Tymbou, Neokhorio, Yerolakko, Argaki. Kyrenia District.—Dikomo.

In addition to the purchase of locusts, a poison bait consisting of bran moistened with water containing molasses and a small proportion of sodium arsenite is being scattered over some heavily-infested areas. This method, which is the method usually employed in other countries, has great advantage over the spraying method used here previously as it is much more quickly carried out; smaller quantities of the more expensive materials are used and there is far less risk of animals being accidentally poisoned. The poisoned bran is scattered so thinly that it is difficult for animals to pick up sufficient to injure themselves. Very satisfactory results are being obtained by this method.

A considerable amount of damage has been caused this spring by the attacks of black aphid (*Aphis rumicis*) on broad beans, crops having been completely destroyed in some places.

Spraying machines have been lent by the Agricultural Department to a number of villagers and instructions have been given in preparing and applying Petroleum Emulsion, which is a simple and efficient means for controlling this pest.

Losses of this kind must continue to occur until individual owners or co-operative credit societies provide themselves with spraying machines and have the will to use them, as it is obviously impossible for the Agricultural Department to carry out spraying on a crop extensively grown in most villages.

The following note published in the "Live Stock Journal" of the 7th March, 1930, under the title "In Praise of the Goldfinch" is reproduced for the information of readers as the goldfinch is one of the commonest birds in Cyprus, away from the villages, and it is well that farmers should know what birds are helpful to agriculture:—

"Every little helps" especially in these days when agriculture is as much in need of assistance as ever it was, if not more so, and one of the "little helps" to farming is to be found in the person of the goldfinch, which is as useful as it is fair to look upon. Of late years there has been a very apparent increase in the number of these birds—a very welcome and satisfactory state of affairs. For the goldfinch is one of those birds which may be set down as being entirely helpful. Its favourite food is thistle-seed though it is by no means impartial to a change of diet in the shape of the seed of a ragwort. A flock of these birds must destroy millions of seeds of these two noxious weeds in the course of the winter, with the result that pounds which might otherwise have had to be spent on

destroying the plants that would have grown from these seeds are saved every year. Thistles and ragwort are two of the most difficult weeds to keep in check, for both bear winged seeds which are often carried for miles from the downs and other waste places on to cultivated ground. It is certain that were it not for the good offices of the goldfinch and in a less degree of the linnet, these weeds would be a far worse pest than they are."

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The methods recommended by Mr. Campbell in his article "The Planting of Young Trees" published in this issue, are doubtless suitable for practice on a small scale or where individual attention can be given to each tree. Such methods would be prohibitive when planting on a large scale on account of expenditure of time and money. The "pit" method which is commended in the article is the method generally followed in large-scale planting and is considered by authorities the most successful for arid and semi-arid regions.

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In connection with the Government scheme for the improvement of pig-breeding the system has proved very popular, as many applications are being received from villages for permission to keep boars on the Government terms. These terms are that the authorised person keeps and feeds the boar, takes service fees, and at the end of three years the boar becomes the lessee's property.

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The Welsh Pony Stallion, Llwynog's Model, has been transferred from Paphos to Evdhimou. It is hoped he will be well suited to the little native mares of that district. This pony stallion was foaled in 1924; he is a dark bay and is about 14 hands.

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The new Veterinary Hospital, built beside the Veterinary office in the Nicosia Public Garden, has now been completed and may be inspected by any one interested.

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A number of mules and horses were purchased and shipped to Haifa by the Director of Animal Husbandry early in the year. They were for the Army in Transjordan. More horses would be purchased if suitable animals could be obtained. The type of horse required is from 15.2 hands upwards, 5-7 years old, plenty of bone and generally suitable as a troop horse.

Two Ayrshire bulls were imported from England in 1929. One bull has been stationed at the Agricultural Department, Nicosia, and the other at Larnaca Stud Stable. The Ayrshire cow in England is a very heavy milker, and it is believed was introduced to Scotland from Denmark some 300 years ago. The most usual colour is white or almost wholly white body with brown or red patches in the neighbourhood of the head. The average weight of a mature cow is about 300–400 okes. This breed is now being exported in great numbers to Sweden, Denmark, United States of America, China, Japan, South America, Canada, Australia, New Zealand and South Africa, and breeds have been established in countries so different as Finland and India and, when its hardiness is considered, there seems every chance of the Ayrshire maintaining the position of one of the leading dairy breeds in the world. This breed wins trophies regularly for milking and butter tests against all breeds. The cows can produce a big yield on poor land and inferior food, the milk averages 3.8–4 per cent. butter fat.

The demand for pedigree bulls is very considerable and in 1920, 1,780 guineas were given for one whose dam yielded 1,113 gallons of milk with 5–7 per cent. of butter fat in 44 months.

It is hoped that the introduction of this breed to Cyprus will prove a great success.

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The following note on "Feeding the Pig" taken from the Live Stock Journal of February 7th, 1930, will be of interest to pig-farmers in this Island :—

"Correct feeding, which is reflected in the substance, colour and texture of the flesh and, to some extent, the quality of the bone, is not less important than judicious breeding. It has often been said that the only pig to pay its way is the good pig, well fed, and that the best pig, badly fed, will turn out a bad pig. Improper feeding may lead to excessive fatness, irrespective of weight; this is a common defect of home-produced pigs. The demand is for well-finished, fine-boned carcasses, with a good proportion of lean and a low proportion of offal, early maturity being an important consideration. Then, again, the use of inferior feeding stuffs, or the misuse of suitable foods, causes otherwise excellent carcasses to turn out practically worthless or to be reduced seriously in value. Swill-fed pigs are obnoxious to the bacon curer; carcasses of pigs indifferently fed on wash are detrimental to the fresh pork market.

Development of an Export Trade in Figs.

A satisfactory report has been received from the Empire Marketing Board on the quality and packing of Cyprus dessert figs. The samples on which the report is made were packed in cellophane. The report is most encouraging and useful and it is hoped will lead to developing a trade in dried figs with the United Kingdom market. The attention of exporters is drawn to the various observations made by the Empire Marketing Board in its report from which the following extracts are quoted :—

The following is a description of the samples :—

SAMPLE 1.—In this sample the figs were packed square in cellophane, the package weighing in all just over 8 ozs.

SAMPLE 2.—The figs, packed in cellophane, formed an oblong package weighing in all 6½ ozs. The package was tied with a narrow coloured ribbon.

The trade opinion which is summarised below, covers both samples.

SIZE.—The fruit in sample 1 was small while that in sample 2 was of medium size.

COLOUR.—The colour was good.

FLAVOUR.—Good.

PACKING.—Good and very attractive. The ribbon tie on sample 2 was specially commended.

PRICE.—Price was estimated at approximately 30s. per cwt. c.i.f.

Generally, the quality of the fruit was superior to the Kalamata fig and it was stated that there should be no difficulty in finding a ready sale provided that attention is paid to the following points :—

(1) A standard of quality, packing and appearance equal to the sample should be maintained.

(2) An adequate supply should be available to arouse sufficient interest in the product. The figure mentioned as a minimum was 10,000 cases each containing 8 dozen packets.

(3) As the trade is seasonal, the bulk of the supply should be ready for shipment in September, and offers should be made in July. Consignments arriving after the Christmas buying arrangements have been completed are apt to be left on hand.

(4) The period of transit should not be prolonged beyond three weeks ; otherwise the quality of the figs deteriorates.

Participation of Cyprus in the British Industries Fair, 1930.



Cyprus Exhibit at British Industries Fair, 1930.

WE reproduce above a photograph of the Cyprus exhibit at the British Industries Fair, held at Olympia, London, from the

17th to the 28th February, 1930, which has been kindly furnished by the Trade Commissioner for Cyprus in London.

The following extracts taken from the Trade Commissioner's report on the exhibition, are published for the information of readers so that the public may be informed of the valuable work which is being done in the United Kingdom by the Trade Commissioner in making the products of Cyprus known to buyers and consumers:—

“The British Industries Fair is the most important annual event of its kind and Cyprus was represented for the third successive year. Special prominence was given to brandy, cigarettes, leaf tobacco, lemon and orange squash and textiles. For the first time figs packed in a transparent wrapper were shown and attracted attention, as was to be expected from the favourable report received from the Empire Marketing Board.

The Cyprus Stand was visited by Her Majesty the Queen, who was accompanied by His Royal Highness the Duke of York and Her Royal Highness Princess Mary, Countess of Harewood. Her Majesty was pleased to express interest in the exhibit, and particularly in the curtains of local manufacture with which the Stand was decorated. Official visits were also paid by the High Commissioner for South Africa and by the Lord Privy Seal.

Most attention was given to cigarettes, lace and embroidery and citrus fruits and products.”

It may be mentioned that as the result of this exhibit an enquiry has been received for 250 cases of figs, each case containing 8 dozen packets put up in cellophane paper as shown at the British Industries Fair. If this order can be executed satisfactorily it will doubtless be followed by further and larger orders.

The Apricot tree in Cyprus.

By P. SYMEONIDES, *Inspector of Agriculture.*

THE period of introduction and origin of the apricot tree grown in Cyprus is not definitely known, but it is believed to date back to or before the first century. Whether the first introductions were the trees indigenous to China and introduced to Europe through Armenia or through Persia to Anatolia or those from the north-east coast of Africa where the apricot grows wild, is not definitely known.

In whatever way the tree was introduced into Cyprus it is of little consequence now. The most important fact is that the soil and climate are most favourable to the growth of the tree. In the Island some very old and large trees are found and it is

recorded by Gennadius that there was an apricot tree at Lefkara with a trunk diameter of ninety centimetres.



A Kaisha branch.

The apricot tree is cultivated with great success all over the Island up to an elevation of 5,000 feet. The principal centres of intensive cultivation are Ayios Ambrosios and Kalorga in the

Kyrenia District and Deftera and Kliron in the Nicosia District. In the days before the establishment of citrus groves in the Famagusta District, the apricot tree and especially the Kaisha variety was cultivated to a great extent in the gardens at Famagusta.

There were many varieties cultivated in the Island but since organised grafting has been followed, growers cultivate only certain distinct varieties.

Two distinct types of apricots are grown, those with a sweet kernel called "Glykipyrines" and those with a bitter kernel called "Bieropyrines." All those belonging to either of above types are called "Chrysomilies," which are again distinct from another called the "Kaisha."

Amongst the Chrysomilies varieties there are early and late-fruited varieties, but the earliest variety of all is the "Aydrossitiki," named after a place in Ayios Ambrosios where it is mainly cultivated.

The fact that this variety has been cultivated in Ayios Ambrosios since ancient times leads one to believe that the European variety Saint Ambroise originated from Ayios Ambrosios.

The "Kaisha" cultivated in Cyprus is distinct from the variety cultivated in Greece under the same name. The Kaisha in Cyprus is cultivated mainly at Deftera. The variety is believed to be peculiar to Cyprus, as it is quite distinct from the apricot.

The tree does not attain the size and height of the ordinary apricot tree and its branching characteristics are different, tending more to the horizontal than to the perpendicular.

The leaves are rounder with a short well-defined apex of light-green colour. The buds are spaced closer on the fruiting branches and the flowering buds occur usually in clusters of three and four together.

The Kaisha is also easily distinguishable from the ordinary apricot tree after the fall of the leaves by the spacing and arrangement of buds on its branches. At the time of blossoming, the flowers appear to be in bunches, due to the buds being close together, the blossom is of lighter colour than the ordinary apricot tree.

The fruits are of medium size, roundish and of a white creamy colour in the shade, but when exposed to the sun tinged with a rose colour.

The fruits have free stones with sweet kernels, they are very juicy and possess an excellent and distinct flavour. The fruits can be preserved, dried or crystallized, they are also excellent for bottling or canning.

The Kaisha is grafted on the ordinary local apricot which has been grown from seed.

The apricot tree is usually propagated from apricot stones. It is sometimes grafted on the almond in order to resist drought better but on account of the fact that the apricot-tree grows



Drying Kaishas at Deftera.

quicker than the almond stock there is often a great difference between the diameter of the trunk of the stock and that of the grafted apricot.

There is an old custom which still survives, although efforts are made to stop it. It is the propagation of the Kaisha by grafting on apricot trees with trunks of large diameter. The graft grows quickly, and strong, while it produces large and excellent fruits. The cut trunk of the apricot tree, however, does not heal easily and the stock soon rots, which results in the branches falling off very easily, thus reducing the life of the tree.

The apricot tree is propagated in the Government Nursery Gardens and in addition there are many private nurseries at Deftera and Klirou where apricot trees have been propagated since olden times.

Since the British Occupation and particularly from the early days of the Department of Agriculture, various selected English varieties of apricots have been imported both by individuals and by the Agricultural Department. These varieties are spreading very slowly, because the trees do not bear as heavily as the native varieties, even although the fruits are of a better quality and fetch a higher price. The grower still prefers to see his trees covered heavily with an inferior fruit and would never think of thinning out for improvement of quality.

The propagation of these improved varieties should increase in ratio to the demand by visitors to the Island and with the improvement of export facilities.

Apricots and Kaishas at present are mainly consumed locally as fresh fruits. A limited quantity is exported to Egypt. The export trade to Egypt could be considerably extended with an improvement in the quality of the fruit produced, better methods of packing and improved condition of transportation.

Many years ago an Armenian, who had lived in California, came to Cyprus, and started at Deftera a systematic business in drying apricots according to Californian methods. At the same time he started a properly laid out apricot plantation in which he grew apricots from seeds imported from California and Anatolia. A similar business was also started at Ayios Ambrosios.

Although much time and money was spent on this work the results were disastrous for the simple reason that the Cyprus apricots proved to be quite unsuitable for drying purposes, even for export to Egypt.

This failure was due to the fact that Cyprus apricots have little flesh and high acidity, both of which qualities render the local varieties unsuitable for drying purposes.

Endeavours have been made by the Agricultural Department to introduce into the British market Cyprus apricot pulp. A small consignment was prepared at the demonstrational fruit-preserving plant of the Department, but again the results were unsatisfactory. Cyprus apricots being of pale colour could not produce the golden colour required by the British market for apricot pulp and jam. Another drawback was that the pulp

produced contained less sugar than similar pulps imported from other countries.

Although a failure was experienced with the ordinary Cyprus apricots, the same results did not occur with the Kaisha which fruit, as previously stated, is excellent for preserving, bottling or canning. A big export industry could be built up with the Kaisha.

A paste is also prepared from apricots called "Chrysomilopitta" and is dried in the sun in the form of sheets. This paste is eaten either in the sheets or it can be made into jam when required.



Drying apricots at Ayios Ambrosios.

Although, as stated above, the apricots of the native varieties, with the exception of the Kaisha, have proved unsuitable for commercial purposes, there are good prospects should improved apricots be grown. Private experiments with apricots of imported British varieties have proved that excellent fruits suitable for all purposes could be produced in the Island, and that the cultivation of these varieties in larger areas could lead to the establishment of a large export business.

Apricot-trees of the varieties "Large Early," "Montgamet," "New Large Early," and "Moor Park," already tried in the Island, have produced fruits of excellent quality and size. Fruits of these varieties have been found to weigh forty to fifty drams and are of excellent colour and flavour. There is no reason why such apricots could not be produced in large quantities.

Egypt has in the past and will in the future be a large consumer of Cyprus products and the possibilities of apricots constituting an important item of export are good should proper methods of preparing the fruit for the market be followed.

Small quantities of fresh apricots are already exported to Egypt.

Imports of Lemons into the United Kingdom in 1929.

THE following note on the import of lemons into the United Kingdom is extracted from the Empire Marketing Board's Weekly Fruit Intelligence Notes No. 49 of the 5th March, 1930 :—

In addition to oranges, grapefruit and bananas, imports of which into the United Kingdom last year recorded new high levels, the imported supplies of raw lemons in 1929 were also higher than in any previous year. Total imports which amounted to 1,362,000 cwts. showed a recovery of 234,000 cwts. from the low level to which they had fallen in the previous year as the result of the keen demand in that year in Europe and America for citrus fruit during the unusually hot summer months. Although the size of the Italian crop in 1929 was somewhat lower than in the previous year, movements from Italy to this country were more normal and showed a recovery to 1,000,000 cwts. as compared with 869,000 cwts. in 1928. Murcia had a somewhat more favourable crop last year than in the previous year, and, with demand less active in other European markets, imports of Spanish lemons into the United Kingdom recorded a substantial jump to 300,000 cwts. from 165,000 cwts. in 1928.

In the table below are shown imports into the United Kingdom during the past five years, distinguishing the chief countries whence consigned.

TABLE I.—IMPORTS OF LEMONS INTO THE UNITED KINGDOM, 1925–1929.

Consigned from	1925. Thousand cwts.	1926. Thousand cwts.	1927. Thousand cwts.	1928. Thousand cwts.	1929. Thousand cwts.
Palestine	1.8	2.6	4.8	1.8	13.8
South Africa	—	—	—	0.6	0.7
Cyprus	—	—	—	0.3	1.0
Other Empire Countries	0.1	3.4	—	—	2.5
Italy	855.1	998.5	1,014.0	868.8	999.8
Spain	400.1	252.1	165.9	165.4	300.1
Syria	19.9	28.8	22.2	44.2	15.4
Egypt	4.1	4.4	10.1	11.1	3.6
United States	3.6	0.6	0.4	5.4	1.4
Other foreign countries	13.6	25.7	25.8	29.9	23.4
Total Empire	1.9	6.0	4.8	2.7	18.0
Total Foreign	1,296.4	1,310.1	1,238.4	1,124.8	1,343.7
Total	1,298.3	1,316.1	1,243.2	1,127.5	1,361.7

Combined imports from Italy and Spain last year accounted for 95 per cent. of total imports as compared with 92 per cent. in the previous year. The keen demand for lemons in 1928, already referred to, brought out increased supplies in that year from the less important producing countries, notably Syria, but this was not repeated last year and total imports from foreign sources other than Italy and Spain showed a substantial reduction, imports from Syria falling from 44,000 cwts. to 15,000 cwts.

Empire countries do not figure prominently as a source of lemon supplies, but there was a satisfactory advance last year in imports direct from Palestine, which totalled nearly 14,000 cwts. compared with less than 2,000 cwts. in the previous year; imports from Cyprus also recorded a moderate increase. Total imports from Empire sources at 18,000 cwts. showed a striking advance on any previous year. In "other Empire countries" are included imports of 1,860 cwts. recorded as from Gibraltar. The imports recorded from Egypt each year probably relate to fruit previously imported, and may include a proportion of Empire fruit from Palestine and Cyprus.

In Table II. are shown the monthly imports of lemons during each of the past five years :—

TABLE II.—IMPORTS OF LEMONS INTO THE UNITED KINGDOM EACH MONTH, 1925-1929.

Month.			1925. Thousand cwts.	1926. Thousand cwts.	1927. Thousand cwts.	1928. Thousand cwts.	1929. Thousand cwts.
January	..	..	134	101	96	97	134
February	..	..	65	91	129	109	137
March	..	..	115	124	149	114	134
April	..	..	128	94	108	123	133
May	..	..	131	97	80	114	96
June	..	..	174	174	166	116	126
July	..	..	173	123	87	57	117
August	..	..	73	112	49	46	106
September	..	..	30	85	73	56	53
October	..	..	75	113	83	122	116
November	..	..	101	79	133	104	92
December	..	..	99	123	90	70	118
Total	..	..	1,298	1,316	1,243	1,128	1,362

The sharp decline in imports during the summer months of 1928 did not recur last year, when monthly imports showed a steadier consistency throughout the year. Imports of Italian lemons are usually most important in the first six months of the year, reaching their peak in March and falling off somewhat from July onwards, whereas imports of Spanish lemons are usually at their height during the autumn, reaching their peak in October. Supplies of lemons in United Kingdom markets normally fall to their lowest level during September.

The Retting of Flax in Cyprus.

“CLEARLY the process of retting calls for most careful investigation ; next to the proper harvesting of the crop this is probably the most important of the earlier operations.”—(Scientific Research in the Linen Industry, by J. Vargas Eyre, Director of Research, L.I.R.A.). Probably just as much depends upon a good ret as upon a good crop to make flax growing profitable.

Of all the many natural, semi-artificial and artificial methods of retting, three only are considered of interest to Cyprus at present. These three being similar to the well-established local methods now in practice. They are the cold water ret (natural ret), the warm water or tank ret (semi-natural ret) and the dew ret (another form of a natural ret).

Before proceeding to describe the special problems and difficulties encountered in retting in Cyprus, the following short description of what actually takes place during the process of retting is given :

During the water ret two distinct processes take place. The first sets in a few hours after retting has started and may continue twenty-four hours or more. The result of this process is the detachment of the epidermis. At this stage no bacteria are found in the straw. The second process sets in several hours after the first is completed and continues from twenty-four to forty-eight hours. This process results in a complete change in the structure of the fibre strands due to the action of bacteria. The second process is the ret proper.

The duration of retting depends chiefly on the temperature of the water. In cold water it is longer and in warm water shorter. For this reason cold water rets are giving way to warm water rets, and the artificial heating of water to the desired temperature of 25° to 32° centigrade is very often practised. Cyprus is fortunate in having the costly warm water ret as a free gift of nature.

In practice, the water retting, cold or warm ret, is carried out everywhere as follows : a number of ordinary flax bundles, say 10 or 12, are tied together and floated into the pool or tank. As soon as they begin to sink, stones are placed on top to keep the bundles entirely covered with water, to a depth of not less than 10 to 12 inches. Care is taken to keep the bundles upright in order to facilitate vertical circulation of the water. When the flax is about half ready, the bundles should be turned over, so as to give both ends the same chance as the water is usually warmer at the surface, and the retting microbes breed quicker there. When the retting master decides that the process of retting has been completed, he takes the flax out and dries it as quickly and as evenly as possible. Many Cypriot retting masters never turn the bundles, and frequently they leave the bundles insufficiently submerged. They are usually very good judges, through years of experience, of determining the crucial time when the ret has reached its most perfect stage. [2]



Flax straw ready for retting.

The chief difficulties Cyprus retters have to contend with are, under varying conditions, the two processes may be retarded or accelerated ; they may overlap or may be delayed by hours or perhaps days of an apparent perfect tranquillity. An unusually protracted first stage, with the epidermis having become easily detachable and a delayed second process, easily gives an erroneous impression and leads frequently to bad under-retting. An overlapping leads to just as bad an over-retting. This explains why none of the Cyprus retters are masters outside their own particular retting pool.

Careful observation of the ret from the beginning will always guide a retting expert to success ; care should be taken that the first process is not taken for the second, no matter how long it may last.

It should be said, however, that there are many instances of a " misret " which cannot be explained except by the absence of the retting bacteria—but the cause of this absence in turn is often not clearly understood.

The causes of flax being damaged in the ret, or rather after a successful ret, are many, but they are mainly due to carelessness or ignorance.



A retting pool.

It is clear that as soon as the ret is judged to be sufficiently advanced for the straw to be taken out, this must be done, and the straw must at once be subjected to such conditions as would render further development of the retting bacteria impossible.

The anærobic bacteria very soon perish, but the aerobic bacteria may live and develop on moist flax after exposure to the air and a prolonged and uncontrolled retting process may take place. In addition there are many micro-organisms which cause simple rot, and right from the moment the ret is completed, the danger of rot must be kept in mind. Pure cellulose is hardly open to attack by any of the rot-causing bacteria or fungi, but the other substances which envelop the cellulose and form quite 20 per cent. weight of the flax fibre, are an excellent breeding ground for micro-organisms.

The practice of Cyprus retters in keeping the dripping wet bundles of straw tied in the middle and opening only the ends, is obviously favouring all harmful micro-organisms. This becomes worse when, through lack of care, the but-ends become mud covered and shut out the air. In many instances this carelessness has been noticed and straw has been found wet months after it came from the ret.

The quality of the retting water has a very great influence on the final results. The characteristics of a good retting water are difficult to explain. It is generally thought that soft water, with a low content of lime and mineral salts is the best, but then the "golden" river Lys, in Belgium, which produces the highest



Removing flax from the retting pool.

quality flax is by no means a soft water. The only generality which can be confidently said is that pure, fresh, cold water is the least likely to give a good ret. Of all the Cyprus retting pools, Dhenia is said to yield the best, softest and silkiest fibre. Close observation this year at the scutching factory has fully confirmed the correctness of this common belief. It is difficult to understand why Dhenia should be better than other pools on the same river farther down, but the fact remains. Probably the mineral constituents of the soil have some influence.

The retting pools at Margo and Athiænou are of indifferent quality—neither particularly bad nor particularly good. It must be said, however, that flax "J.W.S." retted this year at Margo yielded in scutching fully 20 per cent. of long and fairly soft fibre.

Cyprus Trade, 1929.

THE following notes, taken from the Trade and Shipping Report for 1929, published by the Comptroller of Customs, will be of interest to the farming community :—

The total value of imports of merchandise during 1929 was £1,983,833 as against £1,840,442 for the year 1928, an increase of £143,391.

The wheat crop of the Island during 1929 being an average one there was a decrease in imports of flour of £30,493.

There was a marked increase in the imports of agricultural and water raising implements. Agricultural implements increased in value by £6,799, and iron piping by £11,067. 184 windmills, 215 engines and 83 pumps were imported during the year. The value of fertilizers increased by £29,289, and 21,435 cwt. of seed potatoes were imported as against 18,624 cwt. in 1928.

Owing to increased production and export of barley, potatoes, linseed, etc., and asbestos there were increased imports of sacks by £14,395.

The total value of exports of merchandise was £1,635,736 as against £1,435,767, an increase of £199,969. *This creates a record for the Island*, the previous highest value of exports being £1,542,870 in 1927.

It is very pleasing to be able to report an increase of £199,969 in the exports of the Colony as against a decrease in the previous year of £107,103.

About half of this increase of £199,969 was accounted for by mineral production, principally asbestos and pyrites. The Mining Companies, as in previous years, continued to confer substantial benefits to the Colony both as regards revenue to the Government and in the payment of wages thus keeping up and even increasing the spending power of the people.

The other half of the increase in exports was due to increased agricultural production.

The barley crop was good and although prices were not up to expectation, the Colony exported £45,037 worth more than in the previous year.

Export of potatoes increased by £41,384, wheat by £12,211, cotton by £11,225, and cumin by £10,064. There were also other smaller increases in agricultural products.

There appears to have been an increased demand for animals ; 2,082 oxen, 1,387 mules, 452 donkeys and 828 swine were exported, as compared with 1,068, 951, 295 and 320, respectively, in 1928. The increase in value was £31,474.

The export of grapes and raisins decreased by £15,367, but there was a compensating increase in wine of £9,281.

There was a considerable decrease of £65,242 in the export of carobs. This was due partly to a deficient crop but also to stagnation of the market abroad.

The number of oranges and lemons exported was 5,221,895 less than in the previous year, 15,675,151 against 20,897,046 ; but actually the value realised was very nearly the same, £42,914 against £43,795. There is also the consideration that during the early part of the year the Kia-Ora factory was in full operation using up quantities of lemons and oranges as a result of which £1,302 worth of juice was exported. It is also, I believe, a fact that the consumption of oranges in the Island is on the increase.

The Feeding of Barley (Grain) to Stock.

BARLEY and barley meal is used to a certain extent for feeding to stock in Cyprus. It is estimated that considerably over half a million kilés are so consumed in the Island.

The general practice amongst stock-owners is to feed the barley whole to horses, mules, donkeys, cattle and poultry. The barley is usually ground into flour for feeding to pigs ; only rarely is the barley fed in a crushed state.

When fed whole, the barley is mixed with other food, the ration being arranged according to supplies of other foodstuffs available.

In view of the difficulties farmers are finding in disposing of their surplus stocks of barley, stock-owners are advised to make more use of feeding barley to their animals. Crushed or bruised barley is an excellent foodstuff for cattle and should be used to a much greater extent than is the practice at present. The substitution of barley, for at least half of the beans, rovi and favetta at present fed to cattle, would form a more efficient ration and also a much cheaper one.

Barley is used extensively for feeding at the Government Stock Farm, Athalassa. All grain fed to animals at Athalassa is crushed and for pigs it is ground into flour. The crushing of barley ensures every grain being thoroughly digested and the full nutritive benefit of the food being obtained.

On account of the tough nature of its husk, whole barley is liable to ferment in the stomach, and to give rise to digestive troubles and colics, especially if eaten quickly and greedily by hungry animals. Barley should always be mixed with a quantity of chopped straw, in order to ensure proper mastication and the crushing or bruising of the grain before feeding makes it still safer.

It is not advisable to feed barley until at least one month after it has been threshed. New barley is particularly liable to cause colic and indigestion.

Cyprus Red Wines.

THE IMPORTANCE OF COLOUR.

ONE of the main defects of Cyprus red wines is the lack of sufficient colour. The reason for this, and the effect on the marketing of Cyprus red wines because of this deficiency, is well-known to the wine-producers and merchants. If, however, it were understood by the growers that natural rather than artificial methods should be employed to colour wines it would be to the benefit of the industry generally.

The matter of colour has little bearing on the quality of the wine, but since the market demands a deep red colour it is incumbent on the producer to supply the type of wine for which there is a demand in order that a ready sale for Cyprus red wines may be found.

The practice of resorting to an adulterant colouring will only lead to a bad name for Cyprus red wines. In fact artificially-coloured wines are prohibited on most of the overseas markets.

The improvement of the colour quality of Cyprus red wines through the production of a suitably-coloured grape will be a gradual process, but definite steps in this direction are now taking place.

The Department of Agriculture have imported several thousand cuttings of suitable varieties for propagation and subsequent distribution over all the vine-growing areas.

In addition the Cyprus Wines and Spirits Company have imported, through the Department of Agriculture, a large quantity of cuttings for the same purpose.

These cuttings are now planted in the Government Experimental Vineyard at Saitta and in a segregated nursery at Limassol and cuttings from them will be distributed freely when available.

Over five thousand rooted plants of the variety "Leucas" which were imported in the year 1928 and rooted in the Limassol Vine Nursery, were distributed for planting during the year 1929.

The Cyprus Wines and Spirits Co., Ltd., have distributed over 4,000 rooted plants from the consignment imported by them in 1929, and this year a further imported lot of the same variety will be distributed.

Until there are sufficient quantities of these new varieties for distribution to all the vine-growing areas, it is desirable that more rapid steps be taken by vine-growers in producing a certain percentage of deep-coloured grapes in order that no opportunities for the marketing of Cyprus red wines may be lost.

These steps can be taken if all vine-growers plant a certain percentage of the variety known as *Maratheftico*. This variety

is also known under different names in different localities as Maratheftissa, Spourta-mavri, Krassatia, Pampacostaphylo or Pampacophyllo.

This vine is not at present purposely cultivated, but occurs, here and there, in most vineyards. It is not popular with vine-growers because of the softness of the berries and smallness of the bunches, and it is said to contain too much acidity, but the fruit is of a very dark colour.

Because of this latter quality vine-growers are recommended to plant 10 to 15 per cent. of this vine in new vineyards.

By a mixture of 10 to 15 per cent. of grapes of this variety in the vintage the colour difficulty would be easily overcome and marketing difficulties through lack of colour would no longer exist.

The variety is well-known to vine-growers and is easily identified even during the period of the year when there are no leaves on the vines. It can be detected by its long and strong shoots, which assume a vertical position. These shoots are also covered with a soft-woolly substance. When in leaf, the leaves are distinguishable by their cottony appearance, and when in bearing the bunches of fruit are small and numerous and the berries small and of very dark colour.

It is a very prolific variety and does not require the same amount of pruning as ordinary varieties do in order to induce fruit bearing.

By the increased cultivation of this vine, as well as the new varieties previously referred to, vine-growers should very soon overcome the colour difficulty. The practice of artificial colouring must, under all circumstances, be thoroughly deprecated.

The Suspected Occurrence of Foot and Mouth Disease in Cyprus.

On the 11th March, 1930, an outbreak of foot and mouth disease occurred at Port Said Quarantine Parks in cattle which had been shipped from Cyprus on the 5th March, and had arrived in Port Said on the 7th March.

This fact was notified by telegram by the Egyptian Veterinary Service and thorough investigations were immediately put in hand in this country in order that, if the outbreak resulted from infection which existed in the cattle prior to shipment, the source of the infected animals might be traced and steps might be taken to control the disease.

As the immediate result of the outbreak, the International Quarantine Board of Egypt prohibited the landing of Cyprus cattle in Port Said, and allowed their importation only at Alexandria where they would be slaughtered in quarantine—these

regulations being similar to those which apply to other countries. The Cyprus Government, however, in order to protect our trade with Greece, Palestine and other countries, decided to prohibit the exportation of cattle, sheep, goats and swine until the enquiry into the source of the Port Said cases had been completed.

This enquiry involved the careful examination of large numbers of cattle in the Island with especial and frequent observation of those animals which had been in recent contact with those which had been shipped to Port Said, and the Chief Veterinary Officer visited Egypt to discuss the question with the Egyptian Veterinary Service and the International Quarantine Board.

No cases of foot and mouth disease have been found in Cyprus and it is considered that the animals which became affected in Port Said were infected after their shipment from this country. Arrangements have accordingly been made for the re-opening of the export of cattle, sheep, goats and swine (subject, however, to compulsory observation and certificate of health). It is expected that the new Egyptian quarantine restrictions will be cancelled in the near future and that our animals will again be allowed free pratique after eight days' observation in Port Said or Alexandria.

The protection of our exported livestock from infection during transit with diseases which do not occur in Cyprus has been provided for as far as is reasonably possible, but the very infectious nature of some of these diseases (especially foot and mouth disease) makes it impossible to guard against every chance contamination which might occur on board ships calling at Cyprus.

The prevalence of foot and mouth disease in all neighbouring countries, and the ease whereby it may be conveyed by persons and goods coming from those countries renders the introduction of foot and mouth disease into Cyprus an ever-present possibility. It is, therefore, necessary for all owners of livestock to pay particular attention to the health of their animals and to promptly report to the nearest Police Officer, Commissioner or Veterinary officer if any animal shows symptoms suggestive of this disease.

Affected oxen are first noticed to be not feeding. The mouth in such cases should always be examined. The presence of stringy saliva and of sores, wounds or blisters on the tongue, gums, or elsewhere in the mouth should be immediately reported. In some cases one (or more) of the feet is affected, the ox being lame and blisters and sores being present in the cleft of the hoof or on the skin at its junction with the hoof—any cases of this nature should be immediately notified.

Planting Young Trees.

By H. CAMPBELL, M.C.

WHEN I first started planting young trees in Cyprus, I was told I must first dig out the necessary hole, then throw the loose soil back, but only up to about six inches of the top of the hole, and then plant my young tree in the hollow so formed. When I asked why the tree should be planted below the level of the surrounding land, I was informed that the hollow was necessary to catch and hold as much water as possible, and that no transplanted sapling could stand the severe drought otherwise.



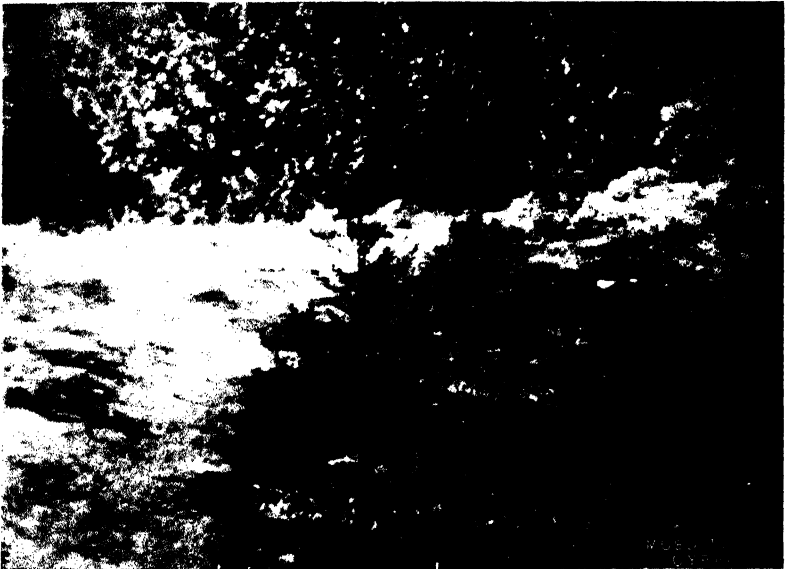
(A)

Although it struck me as wrong, I followed the advice, believing that residents of Cyprus must know the vagaries of their climate better than I; and as it happened, I kept an account of what I planted. Among others I put in 155 Aleppo pines, of which three survived, the rest dying before the end of that rainy season, obviously because the important part of the trees immediately above ground became waterlogged in the rains. Since then I have ignored local advice, with the result that my losses are negligible.

What is forgotten is that the few inches of a tree's stem immediately above the "collar" is very important and must be kept as much as possible open to a free circulation of air. Why are we careful to keep weeds away from a young tree? They do not interfere with the roots; for in a few weeks a pine will

throw down its roots far beyond reach of all weeds. It is simply to allow air to circulate freely round the stem. When the tree grows bigger, of course, it keeps down its own weeds by means of the shadow it throws all round it. And what happens when we plant our tree in a hollow? In winter the hollow is almost continually under water, and in time soil from the surrounding land silts into it, filling it up to the top; and water or soil prevent access to air far more effectively than the worst crop of weeds.

What we must arrange, then, is that the top of the soil in which the tree is planted is on a level with the surrounding land. At the same time, as we have to give water through the first summer after planting, it is an obvious advantage to have a hollow in which the water can be held before it sinks down. Then why not form the hollow as before, but build up the soil in one part of the hollow, bringing it level with the surrounding land, and planting our tree on this little mound? In time the hollow will silt up, and the tree will be left, as in nature, growing at ground-level.



(B)

My practice is to dig out three-foot holes and leave the excavated soil exposed to the sun for the ensuing summer. I then put about half a sack of seaweed (washed three times or exposed to two good rains) at the bottom of each hole, and fling the loose soil back on top of it. Any organic matter will do as well as seaweed, its object being merely to prevent the soil from consolidating with that at the bottom of the hole, and also to retain

moisture and coolness three feet down. After one good rain the soil will have settled down in the hole and should now reach to within five or six inches of the surrounding ground-level.

I then, with a trowel, dig out the soil in the middle of the hollow, forming a "pipe" about 16 or 18 inches deep and six inches wide. Round this I place a circle of large stones—big enough to stand an inch or two above the general ground-level; and I fill up the "pipe" with the excavated soil mixed with a little manure, bringing it almost to the top of the stones. Within this circle I plant my tree, and the necessary water is poured into the hollow outside it.



(C)

There is just one important thing to remember. When manure is added, it must be well broken up, and most of it must be placed towards the lower end of the "pipe," very little being used near the surface. If the "pipe" be made too rich near the top, the roots of the young tree will remain there and will be

killed by the summer drought. They must be encouraged to travel downwards as quickly as possible. Quite a good plan also is to put a couple of layers of dead leaves in the "pipe," one near the bottom and the other some ten inches higher up. These will make for additional coolness for everything below them.

Of the three photos shown herewith, "A" gives two circles of stones, in the nearer of which a small tree can be seen growing vigorously. It will be noticed that the hollow has already silted up, and that the tree stands at ground-level. "B" shows a Monterey Cypress (*Cupressus macrocarpa*), three years old from seed and four feet high. This is favourably placed in the partial shade of a carob and was watered for two summers. "C" shows an Arizona Cypress (*Cupressus Benthami*, var. *Arizonica*), four years old from seed and five feet high. It will be noticed that this is growing in the most arid soil, fully exposed to the sun all day; yet it was only watered for one summer.

I may add, with regard to the Arizona Cypress, that when I planted it, I had very little manure, so that it was left to struggle as best it could in almost pure unfertile chalky rocks. There is no doubt that it does admirably in this climate, growing far more rapidly than the native Cypress; and its silver foliage and dense habit make it peculiarly attractive. Whether its timber will prove as valuable as that of our native tree I do not know; but as a rule one finds that a tree that grows in very chalky soil makes a hard wood. Unfortunately, the seeds I have received from abroad do not germinate very freely; so that I have not many specimens of this variety. When once my trees have grown high enough to produce vigorous seeds of their own, we may hope that the Arizona Cypress will spread quickly through the Island.

Acknowledgment.

THE illustrations in the article "Canning Fruit by Hand" on pages 37 and 38 of the January issue of the Cyprus Agricultural Journal were reproduced from the Journal of the Ministry of Agriculture of May, 1926. It is regretted that an acknowledgment was not made at the time.

EDITORIAL AND ADVERTISEMENT NOTICES.

All communications for publication should be addressed to the Editor "Cyprus Agricultural Journal," Department of Agriculture, Nicosia.

Communications are invited, written on one side of the paper only. It should be understood that no contributions or specimens can be returned unless postage is prepaid.

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As special efforts are now being made to increase the circulation of the Journal in the Colony and Overseas it may be regarded as a valuable medium for advertising.

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The "Cyprus Agricultural Journal" is published in January, April, July and October, on or about the 15th of the month.

The Editor does not necessarily endorse the statements or opinions expressed in contributed articles, the responsibility for which rests with the authors.

DISTRICT NOTES.

*Abstracts from the Annual Reports of the Commissioners of Nicosia, Famagusta, Limassol, Larnaca and Paphos.**

NICOSIA DISTRICT.

AGRICULTURE.

THE yield of agricultural produce in general was greater than in the preceding year, and this is attributed to favourable climatic conditions and a better rainfall.

There was a slight decrease in the yield of cherries, peas, hazelnuts, vetches, grapes and carobs.

There was an increase of 20 per cent. in the production of silk-cocoons compared with that of the preceding year. Owing to the low price of cocoons a greater quantity of cocoons was reeled and the yield of silk is 50 per cent. more than the preceding year.

The returns show an increase in the production of flax 30 per cent., cumin 20 per cent., French beans 40 per cent., kidney beans 50 per cent.

The yield of the following summer crops was also better than that of last year: aniseed, cabbages, onions, tomatoes, artichokes, peas and other vegetables.

The yield of almonds was eight times more than that of last year and the yield of apples, apricots, figs, pomegranates, walnuts and plums also showed an improvement.

The total yield in the past four years and the prices realised by various kinds of agricultural produce are shown in the following tables :—

CEREALS.

	1926.	1927.	1928.	1929.
WHEAT.				
Total yield (kilés) ..	453,456	535,439	374,112	587,360
Price	6/- -9/4½	7/- -8/-	7/4½-8/4½	5/- -6/-
BARLEY.				
Total yield (kilés) ..	509,033	556,606	511,052	776,313
Price	2/- -2/7	3/3-4/-	2/6-3/1	2/- -2/6
VETCHES.				
Total yield (kilés) ..	42,917	50,375	53,517	51,812
Price	6/- -6/4½	5/- -5/5	6/- - 6/4½	6/6-6/7
OATS.				
Total yield (kilés) ..	33,211	37,747	21,353	30,196
Price	2/4-2/6	2/- -2/2	3/- -3/3	2/- -2/3

* Abstracts from the Annual Report of the Commissioner, Kyrenia, were published in the January issue.

Similar tables showing yield and prices of other products are as follows :—

	1926.	1927.	1928.	1929.
OLIVES.				
Total yield (okes) ..	858,000	1,542,778	371,640	1,951,645
Prices	1/1-1/3	4-6cp.	6-8cp.	4-5cp.
OLIVE OIL.				
Total yield (okes) ..	66,024	278,996	20,000	312,450
Prices	2/- -2/4	1/5-1/6	1/7-2/2	1/3-2/-
ONIONS.				
Total yield (okes) ..	No returns	195,513	232,580	539,890
Prices	available	1½-2cp.	1½-2cp.	½-1cp.
CAROBS.				
Total yield (Cantars)	5,192	5,380	4,533	4,085
Prices	24/-	17/4½	25/-	18/- -24/-
SESAME.				
Total yield (okes) ..	103,000	53,078	36,528	102,346
Prices	8-9cp.	5½-6½cp.	6½-7cp.	6½cp.
GRAPES.				
Total yield (okes) ..	2,100,000	2,137,000	3,688,500	3,566,917
Prices	1-2cp.	1-2cp.	1-2cp.	1-2cp.
BROAD BEANS.				
Total yield (okes) ..	914,000	1,457,689	829,935	1,863,302
Prices	4½-5½cp.	4½-5½cp.	5-6cp.	2-3cp.
POTATOES.				
Total yield (okes) ..	2,214,000	3,389,941	2,614,087	4,454,544
Prices	1½-2cp.	2-2½cp.	1½-2½cp.	1½-2cp.
COTTON.				
Total yield (okes) ..	465,500	324,268	245,192	400,601
Prices	4½-5½cp.	4½-5½cp.	5-6½cp.	5-5½cp.
SILK COCOONS.				
Total yield (okes) ..	27,455	25,260	29,174	36,289
Prices	3/3-3/6	3/3-3/7	3/3-3/5	2/4-3/2

It will be observed that the yield for the year 1926 was estimated in most cases in round figures.

In 1929 an improved system of collecting the statistics was adopted.

ORANGES.

The following quantities of oranges have been exported from Morphou and Lefka :—

			1929.			Value.		
						£	s.	cp.
Morphou ..	..	931,880	3,606	7	0			
Lefka ..	..	2,480,465	12,293	8	5			
			1928.					
Morphou ..	..	747,240	2,336	0	8			
Lefka ..	..	3,829,940	11,458	15	4			

Jaffa oranges were sold from £2 to £4 per 1,000 and round oranges from 15s. to 38s. per 1,000.

The yield of oranges and lemons was 30 per cent. more than that of last year.

These figures speak for themselves. In spite of a slight decrease of 4 per cent. of the yield of vetches which is attributed to a less area being sown this year, of 30 per cent. in the yield of grapes owing to the fall of hail, in some areas, and of 10 per cent. of carobs owing to the excessive heat at the time of ripening, on the whole the year 1929 was a prosperous one from an agricultural point of view.

The above figures show an increase as follows compared with those of last year.

Wheat 57 per cent., barley 52 per cent., oats 42 per cent., broad beans 124 per cent., potatoes 70 per cent., cotton 63 per cent., sesame 180 per cent. and onions 130 per cent.

The yield of olives is five times more than that of last year and of olive-oil ten times more.

The production of wool was also 18 per cent. more than that of the preceding year and of milk 60 per cent.

With the exception of a slight decrease in the number of pigs, livestock generally shows an increase compared with the preceding year. This is attributable to the fall of early rain which has secured ample fodder.

FAMAGUSTA DISTRICT.

CEREALS.

It is estimated that the wheat crop was generally some 20 per cent. in excess of that of 1928, though almost total failure has to be recorded in the country round Trikomo and Gypsos. Such failure was largely, if not entirely, due to the absence of rain along that particular section of the north range.

The barley was excellent in respect of both quantity and quality, in spite of considerable damage having been caused to the crop by Sirividhi, in certain areas of the Karpas and in the neighbourhood of Akanthou.

Production during the past five years under all heads is as follows :—

	Wheat kilés.	Barley kilés.	Vetches kilés.	Oats kilés.	Favetta kilés.
1925 ..	719,850	788,330	22,570	34,460	22,570
1926 ..	383,007	730,510	66,332	45,739	20,611
1927 ..	555,159	833,202	148,107½	51,124	30,277
1928 ..	518,069	809,947	122,208	25,559	21,231
1929 ..	654,240	1,109,438	104,650½	35,337	16,639

As regards prices, these were more or less satisfactory, *i.e.* from 5*s.* 5*cp.* to 6*s.* 6*cp.* per kilé for wheat and 2*s.* 2*cp.* to 2*s.* 7*cp.* per kilé for barley soon after the harvest, but towards the end of the year those who held stocks were unable to sell even at a loss. Greece and Turkey took a certain amount, but at the close of the period under review even those who were prepared to cut their losses and accept what might be offered could scarcely find a market.

COTTON.

For the most part this product showed satisfactory results, but in one part of the district, namely, round Synkrassi, it was found impossible even to plant owing to lack of moisture, there having been no water in the Synkrassi dam. Prices ranged from 5*cp.* to 6*cp.* per oke.

OLIVES.

A remarkably good yield was obtained everywhere throughout the District. Although attacks by the Olive Fly (*Dacus oleæ*) were noticed, these for the most part only occurred too late in the season to cause any extensive damage.

In this connection it may be noted that the people at last appear to be realising the necessity of utilising more up-to-date methods for extracting the oil and modern presses are slowly but surely replacing the archaic plant previously in general use. Both at Akanthou and Komi Kebir, also at a few other villages, modern presses have been installed.

CAROBS.

A fairly good yield was experienced, but in comparatively few parts of the District is the tree found and it can scarcely, therefore, be classed among the staple products. Some 19,728 cantars were collected as against 14,173 in 1928 and the prices realised fluctuated between 17*s.* and 18*s.* per cantar.

POTATOES.

Though much more land was placed under potatoes during the period in review, it is generally considered that there was a falling off in the quantity produced as compared with 1928. On the whole, however, the quality, especially of the first crop, was good. Prices ranged from 50 to 60 paras per oke.

CITRUS.

This branch of agricultural activity is rapidly becoming one of the most important in the District, at any rate so far as Famagusta and its immediate environment is concerned.

The manner in which new groves are constantly coming into being is most noteworthy, and the industry has been given an additional impetus by certain villagers from, it is believed, Sotira, who evolved a primitive boring plant of their own and undertake private contracts for as low as £5 for each bore sunk. Despite the extreme crudity of their appliances, these villages seem scarcely ever to have failed, even when operating on such unpromising ground as that found round Phrenaros and other Red Villages.

The estimated yield in 1929 is put down at 9,090,980 oranges ; 860,825 sweet lemons ; and 2,567,480 lemons, prices being as follows :—

Oranges (round) from 15s. to 16s. per 1,000.

Oranges (Jaffa) 35s. to 40s. per 1,000.

Lemons from 12s. to 16s. per 1,000

Lemons (sweet) 10s. per 1,000.

TOBACCO.

Some 3,400 donums of land were planted up with this product, the reported yield being identical with that of 1928, namely, 140,000 okes. It is believed, however, that this is an under estimate, but whether or not this is the case, at least the quality has shown a most marked all-round improvement.

It was a little unfortunate that the close of the year saw large stocks of both Latakia and cigarette tobaccos still unsold. Since the set-back following upon the Great War the farmers are easily frightened and it would have been added incentive had a quick and good market been found. As matters now stand, it is to be feared that production in 1930 may decrease considerably.

SILK.

The silk cocoons reared in this District are estimated at 24,346 okes and were sold from 2s. 5cp. to 2s. 7cp. per oke as compared with 25,206 at 3s. to 3s. 3cp. last year.

POMEGRANATES.

This crop was very good and was disposed at from 30 to 35 paras per oke as against 40 to 55 paras per oke last year. The low price offered this year for pomegranates is due on the one hand to the congestion of grapes from Greece and Cyprus in the Egyptian market, which is the principal consumer of this commodity, and to the formation of a syndicate of the fruit merchants on the other.

GENERAL.

The district throughout has cause to be grateful for the activities of the Agricultural Department during the past twelve months. Experimental and demonstrational gardens have been started or so improved that there are few phases of agricultural activity in connection with which the farmer cannot now find and obtain instruction.

LIMASSOL DISTRICT.

CEREALS.

The production for the last five years was as follows :—

	1925. kilés.	1926. kilés.	1927. kilés.	1928. kilés.	1929. kilés.
Wheat ..	150,909	159,109	142,590	128,957	170,079
Barley ..	106,902	123,049	107,538	96,073	128,014
Oats ..	26,708	31,914	27,853	20,462	39,449
Vetches ..	15,235	23,481	17,173	11,389	16,924
Favetta ..	520	648	523	412	598

The year is considered to have been a very good one for all cereal crops and particularly for barley.

CAROBS.

A very poor crop. Figures and prices for the last five years are as follows :—

1925	102,000 cantars price from 19s. to 21s.
1926	120,000 cantars price from 13s. 4½cp. to 14s. 4½cp.
1927	115,000 cantars price from 18s. to 24s.
1928	75,000 cantars price from 23s. to 26s.
1929	60,000 cantars price from 17s. to 24s. 4½cp.

The most noteworthy feature was the high price at which the season opened compared with the low rate to which it declined towards the end of the year. The result of this is naturally that export has stopped in the hope of a future rise.

Tragasol Products, Ltd., at their factory in Limassol produced 3,300 tons of crushed beans during the year. Their work was much hampered and at times brought to a complete standstill by the high prices ruling.

GRAPES, WINE AND RAISINS.

The crop was considered not to be up to the standard of a good year, nevertheless a total of 25,000,000 okes of grapes is estimated to have been reached as compared with 30,000,000 okes in 1928. The production of wine showed a considerable reduction compared with 1928.

RAISINS.

Prices were poor and there was a decrease in production which was accounted for by unfavourable weather at the time the grapes were being converted into raisins.

OLIVES.

A better year than has been experienced for a long time.

COTTON.

After dropping off badly in 1928, cotton has returned to the production of 1927.

TOBACCO.

Interest in this crop has been recently awakened in the villages by the activities of Government Tobacco Instructors. Ten villages were induced to take it up and a total of 150 donums were planted. The result was disappointing owing to a dearth of rain in March and April and the price of $13\frac{1}{2}$ cp. per oke which was offered did not prove attractive to the growers so that the whole crop remains unsold.

ALMONDS.

Favourable weather produced an excellent crop amounting to 315,759 okes as compared with 32,400 okes in 1928 and 77,000 in 1927. The extension of school gardens is bound to have an encouraging effect on this crop.

GENERAL REMARKS ON AGRICULTURE.

Without being in any particular respect exceptional, the year was satisfactory generally. Carobs, it is true, were very poor, but this crop seems to follow a regular cycle, and high prices made up to the villager for the smallness of the yield. A most useful step has been taken by the Department of Agriculture in establishing a model vineyard on a large scale at Saittà where better and different varieties of vine will be raised and supplied to vine-growers. This will undoubtedly effect an immense improvement in the grapes grown, whether they be for the table, for wine, or for raisins. The vineyards of Limassol which must

represent quite a considerable amount when one considers the labour that was required to bring them into being, are deserving of the help and encouragement that are in this manner to be given them.

LARNACA DISTRICT.

CEREALS.

The estimated figures for crops as stated by Mukhtars were :—

	kilés.
Wheat	317,015½
Barley	497,900
Vetches	25,397
Oats	42,385

The prices were as follows :—

	1928. average.	1929. average.
Wheat	63-66cp.	50cp.
Barley	27-30cp.	22cp.
Vetches	46-50cp.	54cp.
Oats	26-28cp.	20cp.

The reason of the prices being low is attributed to lack of export and more import of flour into the Colony. It would appear that the local conditions of production tend to place local flour in a lower standard and it does not compare favourably in texture and quality in consequence of the indifferent method of production.

CAROBS.

The crop was better in quantity and quality than that of last year, but the market price poorer.

OLIVES.

The olive crop is excellent and far above that of the last two years. The production is 1,646,950 okes.

POTATOES.

The potato crop was better than that of last year. The production was 2,698,675 okes, and the market price was 1½cp. per oke.

COTTON.

The cotton crop was better than that of last year. The production is 165,320 okes. The market price was 16-18cp. per oke.

COCOONS.

The production this year is 9,543 okes against 9,873 okes of last year, the decrease being due to the variations of the climate.

SESAME.

This crop was better than that of last year. The production is 11,873 okes.

GRAPES.

The yield of grapes was 30 per cent. more than that of last year. The production is 2,460,740 okes, and the market price was 1cp. per oke.

POMEGRANATES.

This was also better than that of last year, and of good quality. The produce is 309,915 okes, and the market price was 1cp. per oke.

PAPHOS DISTRICT.

A very heavy general rainfall was experienced during the winter of 1928 and 1929, but unfortunately, as often happens, the rain ceased altogether at the beginning of March, and the season being a late one, the crops, especially on the hill villages, suffered.

I give below the figures of production of the cereal crops for the last four years :—

Year.	Wheat. kiles.	Berley. kiles.	Vetches. kiles.	Oats. kiles.
1926	298,191	178,433	31,270	77,127
1927	272,626	136,326	35,241	69,206
1928	167,913	81,631	18,224	36,424
1929	323,932	192,828	30,404	78,275

CAROBS.

The crop was a poor one and the prices obtained by the growers which began high 22s. to 23s. per cantar, declined rapidly to 19s. to 20s. Only a very small proportion of the crop of the season 1929 has been exported owing to the low prices ruling abroad, and the outlook for the wholesale buyers is not very promising at present.

The figures of the estimated production for the last four years are :—

1926	..	..	..	40,000 cantars.
1927	..	..	..	30,504 „
1928	..	..	..	21,600 „
1929	..	..	..	29,495 „

ONIONS.

Paphos District is noted for its production of onions. The crop was a very good one, being estimated at 1,174,218 okes, the estimated production for last year was 800,000 okes. The price realised averaged about 10s. per cantar which was not very satisfactory.

GRAPES AND RAISINS.

The vineyards are increasing from year to year and the export of grapes from the Port, which some six years ago was trivial, has now become of considerable importance. Large areas of this district are eminently suitable for viticulture and is most noticeable that the greatest increase in cultivation has taken place in the lands adjoining the main roads.

The export of the fresh fruit from the Port for the last four years was :—

		£	s.	cp.
1926	511,435 okes valued at	5,395	16	1
1927	739,843 okes valued at	6,256	0	0
1928	1,189,431 okes valued at	10,209	0	0
1929	918,400 okes valued at	8,289	17	1

POTATOES.

The potato crop in this district is not very extensive. Planting, however, is slightly on the increase, and there was little disease. The production for the year was estimated at 471,590 okes.

COTTON.

The production of cotton was well above the average in quality and quantity, and fetched about 5cp. per oke.

HEMP.

The hemp crop is peculiar to Paphos District where it is grown in thirty-five villages, all of which lie in close proximity to Ktima.

FLAX.

The production of fibre and seed was about average, being estimated at 5,040 okes and 2,075 okes respectively.

SILKWORMS.

The cocoon season of 1929 was a disappointing one both from the point of view of the producer and buyer, on account of a spell of abnormally cool weather accompanied by rain during the month of May which proved devastating to the worms, and resulted in a reduction in the average crop of about 20 per cent. when an increase of 10 per cent. had been anticipated on account of the extensive planting of the mulberry during recent years. Not only was the crop small, but the cocoons were of an average lower quality than usual.

CITRUS FRUITS.

Oranges and lemons are only grown in small quantities, except at Yialia where there is a large plantation from which exports take place every year. Several new gardens have been started, however, in and around Ktima and Polis.

The Cyprus Agricultural Journal.

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Price 3cp.

EDITORIAL NOTES.

THRESHING is now in full swing. The crop of cereals harvested is, as was anticipated, under average. This reduction in yield, especially of wheat and oats, is due to the exceptionally wet winter season and to the adverse climatic conditions which favoured the development of rust.

The production of fruits has varied; apricots, kaishas, plums and damsons have been scarce, while peaches, apples, pears and cherries are reported abundant and, in the case of cherries, exceptionally good. A good crop of almonds is anticipated. The prospects in the vine areas are reported good, although the weather has favoured mildew, which is causing a certain amount of damage to those localities where sulphuring has been neglected. Climatic conditions favour a prosperous year for summer crops, especially cotton.

* * * *

The scheme submitted for a grant from the Colonial Development Fund, it is understood will receive sympathetic consideration and there is every likelihood that the scheme will be in operation next season. This scheme, which was referred to in the Editorial Notes of the April issue of this Journal, is for the provision of power threshers and modern agricultural machinery and implements. The Director of Agriculture, Mr. M. T. Dawe, O.B.E., F.L.S., F.R.G.S., M.L.C., will, during his vacation leave this summer, confer with the Agricultural Advisor to the Secretary of State in connection with the details of the scheme.

* * * *

Considerable interest in portable power threshers has been taken by the leading grain-producing farmers of the Messaoria this year and there has been keen competition in securing the services of the limited number of power threshers at present available for hire. This spirit of enthusiasm bodes well for the

success of the Colonial Development Scheme referred to in the preceding paragraph. A modern thresher has been operating at the village of Synkrasi during the last two months. A new 3 ft. 6 in.-size thresher was imported early in July and this thresher will travel the Messaoria during the season. There is another working in the vicinity of Vatili.

* * * *

In order to discuss measures for stabilising the grain and milling industries of the Island, a four days' official conference was held in May under the auspices of the Department of Agriculture under the chairmanship of the Director of Agriculture. The meetings were arranged so that farmers, bakers and millers, merchants interested were invited to discuss their various interests at each of the respective meetings.

Particulars of the outcome of these conferences have been published in the Agricultural Supplement to the *Cyprus Gazette* of May, June and July.

* * * *

A strong Government Trade Development Mission has been appointed to visit Syria, Palestine, Egypt and Greece with a view to further develop the trade of the Island with these countries.

The Mission is in charge of the Director of Agriculture, (Mr. M. T. Dawe, O.B.E., F.L.S., F.R.G.S., M.L.C.), the other members are Mr. H. Ll. Jones, Chairman of the Agricultural Bank and of the Cyprus Chamber of Commerce and Manager of the Ottoman Bank, Mr. N. P. Lanitis, Director of the Cyprus Wines and Spirits Company, Limited, and Mr. S. W. Caruana, Chief Clerk to the Treasury. Mr. Caruana is Secretary to the Mission.

The members of the Mission embarked at Larnaca on the 15th June for Alexandretta. The itinerary up to the end of June included Syria and Palestine. Early in July the Mission proceeded to Egypt and on the 11th July left for Greece.

* * * *

The dates for the Cyprus and Near East Agricultural and Industrial Exhibition have been fixed for the period 3rd to 16th October, 1931. At first it was decided to hold an Exhibition of one week's duration, but it has since been agreed to prolong the period to a fortnight. The Exhibition will be held at Nicosia.

* * * *

The summer crop of potatoes has been severely attacked by *Lita solanella*, the Potato Tuber Moth, and amongst the first news from the Government Trade Mission was the fact that many consignments of diseased potatoes are arriving at the ports of Syria and Palestine.

Considerable concern was caused in local merchant circles only a few months ago when the imposition of new duties in Greece affected the trade. Since then a recovery has been made and during the months of May and June a fresh potato export trade has been taking place. The trade is now threatened by a certain class of merchants who are exporting diseased potatoes. Steps are being taken to enforce more rigidly the Potato Tuber Moth Order so as to check this disease, but merchants are advised for their own benefit to do all in their power to prevent the export of diseased potatoes and all consignments should be thoroughly inspected before export.

* * * *

An account of the spring meetings of the Nicosia Races by a contributor is published elsewhere in this issue. This revival in racing is most encouraging.

A general meeting of subscribers was held at the Grand National Hotel, Nicosia, on the 8th June.

The following Committee was elected :—

Mr. C. M. Georgiades.

Mr. S. Pavlides.

Mr. M. G. Zarifi, M.B.E.

The Hon. Munir Bey, M.E.C., M.L.C.

Mr. C. Noble, M.B.E., U.D.A.

It has been decided that the prizes should be increased by 50 per cent. for the autumn meeting and it is possible that they will be increased by 100 per cent. during the spring meeting.

The breeder of the winner of each of the races will receive a bonus of £5, for one win only, during the autumn meeting.

* * * *

The following note published in the *Livestock Journal* of 18th April, 1930, entitled "Pig as Land Reclaimer" is quoted for information of readers :—

"Looking about for a cheap and effective method of land restoration, we cannot ignore the services in this direction that are offered by that often much-abused animal, the pig. The pig may be an untidy worker, but he is a very efficient one because of his habit of poking his nose into everything. Given his freedom, and with no ring in his nose to impede his progress, the pig can do a surprising amount of cultivation work in the course of a day. Short of a timber tree, he will rout up almost anything, and all the time he is thus cultivating the soil he is manuring it as well. Brambles, bracken, scrub,

growths, weeds of any and every kind, all these he is prepared to deal with as he goes, and a good deal of the stuff he routs up he turns to good account by eating it.

The possibilities of the pig in connection with land reclamation have never been recognised in this country as they should be, but sufficient experiments have been made to show that this is one of the cheapest and quickest methods that can be found. There are many acres of good grassland which have been brought into being almost entirely through the pig's agency—land which was producing nothing but rubbish, and which, from the agricultural point of view, was quite worthless, has been converted in the space of no more than a couple of seasons into a good paying proposition both for its owner and for those who rent it.

Ground which has been thoroughly routed by pigs requires very little subsequent cultivation before the first crop may be planted or sown. The clearing off of loose rubbish and the levelling of the ground by harrowing is usually all that is required."

* * * *

The Welsh pony "Llwynog's Model" was returned from Evdhimou to Paphos on the 31st of May.

Native bulls have been given on loan to the villages of Polemi and Alektora.

The Limassol Stud Stables were opened early in June. The thoroughbred stallion "Blawbare" has been sent to Limassol. In addition, a half-bred bull, a jack donkey and a boar as well as some red Sussex poultry have also been stationed at Limassol.

* * * *

The following note has been received from a correspondent on "Feeding Barley to Stock":—

"The article on the above subject in the April issue of the Journal, unfortunately omits mention of the cheapest and best form of feeding this grain to both horses and stock. It may be that it is not known to many out of India, where it has been in use for horses at any rate, for very many years. This consists of parching the grain on an open iron plate, or other utensil over a slow fire. This parching has the advantage of driving out the essential oil, or special constituent, which is so harmful in the uncooked grain. It also splits up the husk, the tough nature of which you refer to in your article. The parching should not be carried to the extent of roasting the whole of the grain, but merely to splitting open the husk and just browning the outside of the grain. A very little practice will enable a woman or boy to parch a very large bulk in a day. I would commend it to all as a cheaper and better way of feeding this

grain, than the crushing you advocate. Will you give it a trial ? I may add that I can guarantee this system, as when serving in the R.H.A. with some 300 horses and about 40 draught bullocks, we found it invaluable and had none of the sickness we had when feeding with gram, the kind of pea usually fed to the Army."

The following editorial comments on the above note are made :—

The type of food and the manner in which it is fed with success vary in different countries according to the customs of the stock owners. The adaptability of the digestive organs of the animals is also a very pronounced feature. For example, in Great Britain barley is never fed to horses and is regarded as a very dangerous food for them and the ill effects caused to animals which accidentally eat large quantities of barley in Great Britain are well known. Thoroughbred horses coming from England to Cyprus are given a full ration of barley, either whole or bruised within two months of their arrival and yet very little digestive disturbances ever occur in Cyprus. Undoubtedly bruised barley is more easily digested than the whole grain. Parched barley may be a still better food but it is doubtful if the labour and expense involved would be justified.

Imperial Institute's Annual Report, 1929.

CLOSE touch with the Imperial Institute is maintained by the Department of Agriculture and valuable services are rendered to the Colony by the various branches of the Institute in making investigations and analyses which cannot be dealt with locally. The following extracts from the Annual Report, 1929, by the Director to the Board of Governors give a summary of the investigations and enquiries made by the Imperial Institute for Cyprus during the year 1929 :—

" COMMITTEE ON VEGETABLE FIBRES.

The question of the development of flax-growing in Great Britain was discussed and a provisional scheme was considered indicating directions in which the project might be advanced. A report on the possibilities of flax production in Cyprus by Mr. W. Megaw of the Department of Agriculture, Northern Ireland, as the result of his visit to the island at the instance of the Empire Marketing Board, was also considered and certain recommendations were made."

" COMMITTEE ON TANNING MATERIALS.

The Committee were consulted by the Government of Cyprus in connection with proposals to develop the sumac industry of that island by the establishment of plantations and the erection of improved mills. The Committee furnished information regarding the future market for sumac in the United Kingdom, and made recommendations relative to the extension of the Cyprus industry."

" COMMITTEE ON HIDES AND SKINS.

As a result of recommendations made by the Committee, the Cyprus Government forwarded a small consignment of tanned kid and lamb skins, which have been submitted to glove-leather manufacturers for commercial trials with a view to finding a market for such skins in this country. A trial bale of 430 raw lamb skins was also received from Cyprus to ascertain the suitability of the skins for glove-making, and was disposed of through the action of the Committee. In connection with these enquiries a representative of the glove-leather industry has been added to the Committee. The Committee also have under consideration a trial consignment of dressed furs of lamb, kid and fox from Cyprus with a view to ascertaining their market possibilities in the United Kingdom."

INVESTIGATIONS.**" OTTO OF ROSE FROM CYPRUS.**

A sample of otto of rose submitted by the Department of Agriculture was found to have constants differing somewhat from those of earlier samples of Cyprus otto received at the Imperial Institute and from those recorded for Bulgarian otto. The otto was not of the high quality of the best Bulgarian grades, but was regarded as having a market value approximating to that of the Anatolian product (about 30s. per oz.) and a firm of merchants who were consulted offered to receive from 1 to 2lb. for trial sale. A small consignment of the otto was accordingly prepared in Cyprus and was sold in London at 35s. per oz., which was regarded by the trade as a very fair price, as Cyprus otto is new to the market and its exact value will have to be ascertained by its behaviour in practical use. At the time, Bulgarian otto was quoted at 25s. to 45s. per oz. for fair to good " commercial " qualities and 50s. for a good branded oil.

A further consignment from Cyprus was received later in the year and was disposed of at the same price."

“TOBACCO.

During the year reports were furnished on twenty-six samples of Empire-grown tobaccos from New Zealand, India, Ceylon, Nyasaland, Southern Rhodesia, the Sudan and Cyprus. The samples included Turkish leaf from New Zealand, Cyprus and the Sudan, and American varieties from India, Ceylon, Nyasaland and the Sudan. The composition of the tobaccos and their suitability for sale in this country were determined and in some cases suggestions were made regarding possible improvements in preparation. Analyses were also carried out on samples of manufactured tobacco made from Southern Rhodesian leaf.”

MINERAL RESOURCES DEPARTMENT.

“LIMESTONES FROM CYPRUS.

These samples, sent by the Director of Agriculture, Cyprus, were intended for the manufacture of citrate of lime. Chemical analyses showed that they could all be used for the purpose, but that they contained rather more magnesia than was desirable, as this constituent causes loss of citrate during manufacture.”

“ASBESTOS WASTE ON CYPRUS SOILS.

It was thought that damage might be caused to vegetation by the deposition of asbestos waste on the soil by irrigation water. Samples of the waste, and of soils on which the waste had, and had not, been deposited, were, therefore, sent by the Director of Agriculture, Cyprus, for examination. It was found that the waste contained about 2 per cent. of magnesia and 0.13 per cent. of nickel oxide soluble in citric acid solution (1 per cent. concentration), but no other constituents which might be harmful to crops were observed. Examination of the soils, which were of a calcareous type, showed the presence of traces of nickel, but no evidence was obtained of the accumulation in them of any harmful compounds attributable to the deposition of the waste.”

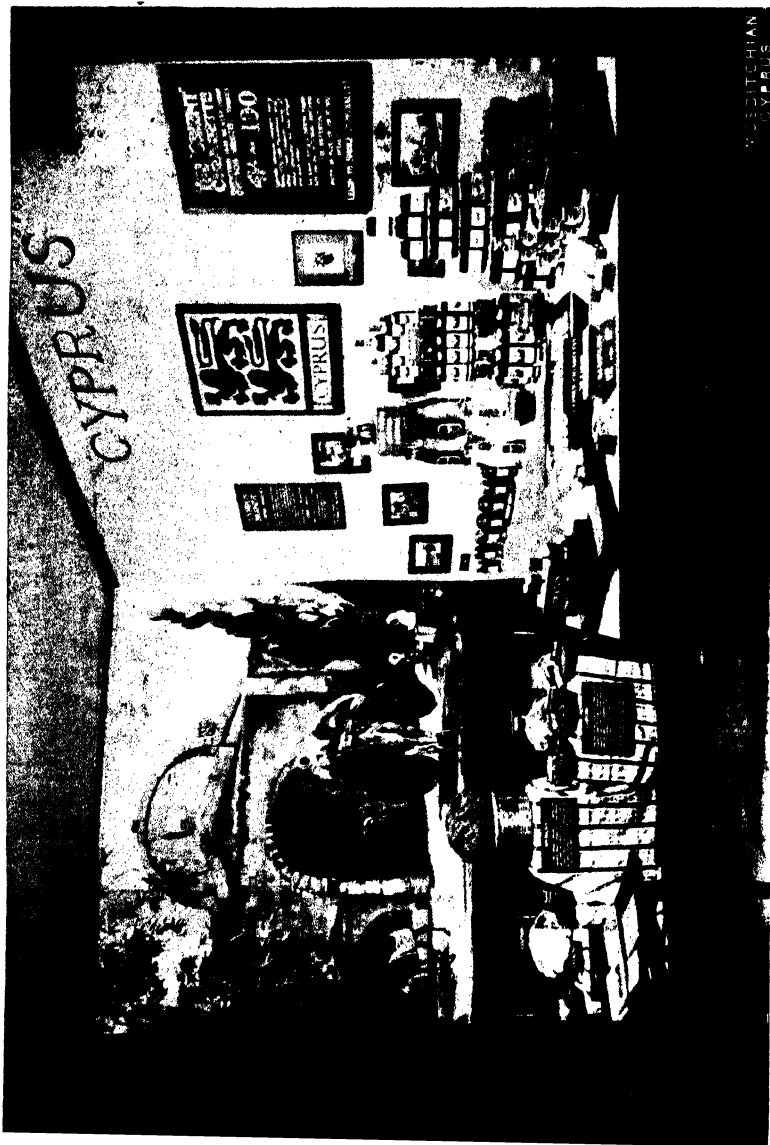
EXHIBITION GALLERIES.

“CYPRUS.

A panorama illustrating the wine industry has been completed and installed in the Court.’

Cyprus at the Belfast Empire Week.

THE illustration of the display organized by the Empire Marketing Board in connection with the Belfast Empire week from



Cyprus Stand at the Belfast Empire Exhibition.

12th to 17th May, 1930, was supplied by the Trade Commissioner for Cyprus in London.

The following is an abstract from the Trade Commissioner's report on the participation of Cyprus at Belfast :—

“ The display was held in the Ulster Hall, and in the absence, owing to illness, of the Governor of Northern Ireland, the Lord Mayor of Belfast presided over the inaugural ceremony. A composite exhibit of Cyprus produce was displayed and was most favourably commented on by the public, as is shown by the following extract from the *Belfast Telegraph* of the 14th of May :—

EXHIBITION FEATURES.

TOPICS OF THE HOUR.

“ the Island of Cyprus has a stall at the Ulster Hall Exhibition for the first time. It is a little place, a good deal smaller than Ulster.

“ ‘ When you stop to look at the attractive little Cyprus stall in the Ulster Hall, just look at the potatoes first—they are of Ulster ancestry, for the Cyprians are Empire traders, too, and send to Northern Ireland for their seed. . . .

“ ‘ The background of the stall shows an actual scene in Cyprus, a camel emerging from the Famagusta Gate in Nicosia, for the country is full of wonderful historical interest, and one is at once reminded of an Irish donkey laden with creels of turf. Below this picture is some of the handwoven cotton cloth of the Island, which looks rather like woollen material. This is the identical piece of cloth which was used as curtains at Wembley, and which the Queen admired tremendously. You can get your Hallow Eve nuts from Cyprus, and perhaps your bath sponge is from there too—but in that case it has probably passed through Greek hands, for the islanders are not keen fishermen—the British are trying to stimulate their interest in sponges.’ ”

The Pomegranate Tree in Cyprus.

By P. SYMEONIDES, *Inspector of Agriculture.*

THE pomegranate tree, like many other fruit trees grown in Cyprus, has always been grown in the Island.

There is no authentic information as to the date of its introduction but, according to mythology, the tree was introduced and planted by Venus.

Since the pomegranate tree has been grown in the Island for so long a period, the date or history of its introduction is of little importance now; the most important fact is that it has stood the test of time for the simple reason that the soil and climatic conditions are most favourable for its growth,

There are several distinct varieties grown in the Island some of which must have been imported at different periods, although no records can be traced by the author giving definite information as to either origin or period of any of these introductions.

The pomegranate tree in Cyprus may be grouped into three distinct classes :—

1. The sweet pomegranate locally known as Glykia.
2. The sour pomegranate locally known as Oxyna or Pharmagorova.
3. An intermediate class neither sweet nor sour, but of a mild pleasing sourish taste locally known as Maifoshika.

Of the sweet class there are subdivisions, distinctive from each other by the colour of the fruit and berries, size and shape of the fruit, thickness of the rind, and taste or size of berries.



Pomegranates. (4-year old trees.)

The following are some of the most important and well known local varieties of this class :—

Angathorovkia which produces large fruits with thin rinds and large berries.

Petrarovkia which produces small fruits, thick rind, small berries and large pips.

Kouforovkia or *Zaitiki* which produces early large fruits with thick rind, large juicy berries of rather pale colour. The fruits are practically seedless as the pips are soft or rather atrophied and practically sterile. There is a sub-variety of these

grown in the Karpas peninsula called Karpasitiki. The only difference between the Karpasitiki and the Zaitiki is that the former has fruits with rather thicker skins of a greenish colour, the berries are also of a brighter colour.

Arsinaki which produces early small fruits with thick rind and large juicy berries.

Jaffitiki or *Jaffa* which produces medium sized fruits with thin rind. This variety is cultivated on a large scale for export.

Prasinophylli which produces large good keeping fruits with a thick rind and large juicy berries. This variety stands transport well and is exported in large quantities to Egypt where it is very popular.

Aoustiotiki is the earliest ripening variety of all. The fruits of this variety which start to ripen in August are large, the rind is of reddish colour and the berries are medium sized and rosy coloured. The fruits of this variety, although the most attractive of all the varieties cultivated in the Island, are only grown in small quantities and insufficient to meet the demand.

The extension of the cultivation of this variety merits better attention since, in addition to its good qualities, it gets good prices on the early export market.

The second distinct class referred to, namely, the sour pomegranate locally known as *Oxyini* or *Pharmakorovi* produces fruits of medium size, with thin rind and very rosy sour berries. The juice of this variety in the old days was used in cookery as a substitute for lemon juice before the introduction and distribution all over the Island of the lemon tree. For this purpose it was cultivated in olden times to a considerable extent.

The third distinct class *Glykoxini* or *Maifoshiki* is subdivided as follows: the *Asprorovi* which produces whitish berries, and the *Kokkinorovi* which produces reddish or rosy berries. The fruits of these two mentioned varieties are of medium size, special shape, very thin rind and very juicy berries. The juice of this variety is considered as excellent for the preparation of fresh drinks.

The pomegranate tree although it may be cultivated with success from sea level up to an altitude of 4,000 feet, is cultivated in Cyprus mainly near the sea coast. The areas where pomegranates are cultivated mostly in the Island are along the south-east coast line of the Famagusta and Larnaca Districts.

The pomegranate thrives on most soils, but in the areas above referred to it is grown on rich, deep and well-drained soils. The tree responds to judicious manuring and considerable use is made of decomposed stable manures, particularly of sheep and goat

manure for which high prices are paid especially in the Famagusta District. The preference given by Famagusta growers to sheep and goat manure is perhaps due to the fact that the soil is of a rather sandy and loose character. This kind of manure does not decompose very quickly and it makes the soil more compact.

Pomegranates are usually propagated by cuttings or by suckers. These are either planted direct in their permanent place or are transplanted to their permanent place after one year in a nursery.

The following customs are practised in planting out a pomegranate garden. The garden may be either destined as a purely pomegranate garden only in which case the trees are planted 8 to 10 feet apart either way or the pomegranate trees may be planted as a secondary crop in a young orange plantation.



Pomegranates.
(4-year old trees with line of young orange trees between.)

This is the usual method followed. The object being to utilize the space between the young orange trees, eventually the pomegranate trees are uprooted when they begin to interfere with the growth of the orange trees.

It is claimed by orange growers that this system affords protection to the orange trees during the early stages of growth and at the same time occupy the ground which would otherwise be unproductive.

There is a general tendency to plant pomegranates as close as possible with the object of shading each other and saving the fruits from exposure to the sun. Through this practice the fruits do not become brownish in colour nor are sunburnt which is not desirable as the rind becomes darkish in colour and the berries are affected and they do not properly develop, lose colour, and become astringent.

Plantations are usually deeply cultivated and large irrigation basins are formed around the tree. The manure is usually placed in these basins.

Opinion differs as to the quantity of water required. It is generally believed that pomegranates require abundance of water with frequent and regular irrigations. It is maintained that irregularity in watering and lack of moisture at the roots are responsible for what is locally known as shisma or bursting of the fruits. If the fruits burst they become unmarketable and useless.



Sorting out pomegranates on board a sailing ship.

Average production is estimated to be approximately 2,500 to 3,000 okes per statute donum.

The export trade is mainly with Egypt. The fruits, if exported on steamers, are packed in baskets but, if in small sailing vessels, are exported in bulk in the hold of the vessel. There is a considerable sailing vessel trade in the season especially from the port of Famagusta.

A small trial commercial consignment was sent from Famagusta to London by a local merchant but the consignment was not very favourably reported upon, chiefly on account of defects in grading and packing and unsuitability of colour.

If the fruits had been of uniform size and packed in standard sized cases they might have found a better reception.

The fruits sent were of good quality but unfortunately both the exterior and interior colouring of the fruit did not meet the requirements of public taste.

Although Cyprus pomegranates are not considered suitable for the British market on account of their lack of brightness in colour and appearance they are believed to be superior in flavour to the Spanish pomegranate and are more juicy.

The following table gives the quantity and value of exports of pomegranates from the Island for the last ten years :—

Year.	Quantity.				Value.
			cwt.		£
1920	82,116	..	..	39,085	
1921	67,181	..	..	27,081	
1922	92,145	..	..	26,376	
1923	75,803	..	..	17,888	
1924	78,045	..	..	21,914	
1925	75,502	..	..	22,988	
1926	98,329	..	..	25,631	
1927	99,937	..	..	28,830	
1928	97,539	..	..	25,759	
1929	91,820	..	..	22,259	

A considerable amount of business is done in pomegranate rind both locally and for export. It is estimated over 30,000 okes are in use locally as a dyeing material in the local cloth dyeing industry. The export trade in pomegranate rind to Egypt and Greece during the year 1929 amounted to 57,435 okes valued at £479.

The most serious pest of the pomegranate tree in Cyprus is the pomegranate mite, *Eriophyes granati*, a minute mite which causes the leaves to wither and fall. If a tree is severely attacked by this pest considerable damage to the tree and fruit ensues.

This pest can be effectively and easily dealt with by spraying with a solution made up as follows :—

32 drams of sulphur is mixed with a little water to make a smooth cream. To this 16 drams of caustic soda is added, which should make it boil, or, if not, it should be boiled on a fire, adding water to keep the mixture from drying up. This is then added to 10 okes of water and the trees thoroughly sprayed.

Drying and Packing of Figs.

IN the 1929 July issue of this Journal, Volume XXIV., part 3, a short general description on fig production in Cyprus was published. In this article a few brief notes on drying of figs was given and special reference was made to oiling of the fig eye, a practice common in most parts of the Island where fig trees are cultivated.

Oiling of the fig eye is done to force early and simultaneous ripening and the figs are hand picked from the trees. This practice is detrimental to the quality of the figs if they are to be subsequently used for packing and export. This year in certain villages where good quality figs are cultivated, a request has been sent to owners of fig trees asking them to refrain from this practice as a special effort is being made in these villages to carry out demonstrational drying and packing for the export market.

It is hoped, as a result of this demonstration, it will be possible in future to eliminate altogether this practice of oiling the fig eye so commonly practised amongst fig tree owners in the Island.

In Smyrna and California where excellent quality figs are produced the figs are allowed to remain on the trees until they naturally ripen and fall to the ground.

The ground surrounding the tree should be thoroughly hoed, freed from weeds, cleaned and levelled and, if possible, canvas or matting spread on the ground underneath the branches, to ensure cleanliness and facilitate collecting the fruit.

The figs should be collected daily in the early morning or late afternoon and taken in baskets to the drying places to be sun-dried. Special mats or trays are kept at the drying place and the figs are spread out on these, being turned over until sufficiently dry.

During the drying process the figs should be protected at night from the effect of dews, as this darkens their colour and harmfully affects the quality. When figs are being dried on mats they should be covered over with canvas at nights if dew occurs. If being dried on special trays, the trays can be piled one upon the other and the whole pile covered with canvas.

Figs are also dried by special evaporators. This method is preferable on a large scale but is expensive. It is a surer method if weather tends to be cloudy or rains occur, as retarded drying affects the colour. Figs dried by evaporators are also kept free from dust and other foreign material and are not exposed for so lengthy a period to the attacks of various insects.

When the figs are being dried they should be sorted out into their various standard qualities.

During the drying period the figs are exposed to the attack of various insects which either burrow into the fruit or lay their eggs on the fruit.

In order to avoid any subsequent damage to the fruit by insects the figs are fumigated immediately after drying in a special fumigating apparatus.

The fumigation treatment is merely the combination of high vacuum and gases which destroys all forms of insect life and at the same time preserves the fruit.

The fumigating equipment can be obtained in various sizes according to the out-turn.

The manufacture of fumigating equipment has been highly specialized in California and anyone wishing fuller details in regard to this equipment can have same on enquiry at the office of the Director of Agriculture.

After fumigation the figs are taken to the store or factory where they are regraded according to size and quality. The figs are then put up in the standard form of pack and wrapped in cellophane or other special paper and put up in cartons or wrapping according to the particular design of the exporter.

When the figs are being put up in the pack form they should be flattened out by the operator, the eye end is turned under and the fig split from the apex to the stem, spread out and arranged in layers. During this process the figs should be kept moist and pliable.

If fumigators are not used figs can be preserved from insects by dipping in boiling brine for one or two minutes. This process helps the figs to retain moisture. The brine is made by dissolving three to four ounces of salt to a gallon of water.

If dried figs are kept in store before packing they should be placed in sacks. In this manner of storage they are kept free from insects and they also improve in quality. The skins absorb moisture and become more pliable.

Bleaching by sulphuring is not recommended. There is a tendency to over-fumigate if very careful handling is not given, furthermore there are very stringent regulations on this method and it should be studiously avoided.



Arbor Day Celebrations, 1930.

THE twelfth Arbor Day was celebrated in Cyprus during the year 1930 by the Turkish schools on the 24th of January and by the Greek schools on the 30th January.

Officials of the Agriculture, Forestry and Education Departments assisted the schoolmasters in the celebrations and one or more officials of the above three mentioned Government Departments were present at each school.



Arbor Day Celebration, Karavas.

The Superintendent, School Gardens, Mr. Frangos, reports that the following number of young trees were issued gratis from school gardens for planting on Arbor Day :—

District.	Number of School Gardens celebrating Arbor Day.				Number of Plants issued on Arbor Day.
Nicosia	30	..	..	..	4,104
Kyrenia	10	..	..	..	1,350
Larnaca	12	..	..	..	2,535
Famagusta	22	..	..	..	3,828
Limassol	25	..	..	..	5,316
Paphos	22	..	..	..	3,908
Total.. ..	121				21,041

The Agricultural Department issued 3,262 fruit trees of the following varieties : loquat, almond, apricot, pear, bitter orange, plum, apple, date palm, pomegranate, peach, lemon, fig and vine.

I. Hakki Eff., Inspector of Moslem Schools reported to the Director of Education on the Arbor Day Celebrations at Lapithos School, Kyrenia District, as follows :—

“Arbor Day was celebrated in this village in the presence of the school pupils and about 120 inhabitants of Lapithos. A procession was held.

The schoolmaster gave an eloquent address on the object and good of tree-planting and afterwards the school children sang songs.

The Agricultural Assistant of Lapithos also gave a short address then some 75 young trees were planted. The Agricultural Assistant demonstrated the proper method of planting. The schoolmaster organised everything in a creditable manner. The school was decorated and a good exhibition of various plants and seeds were shown in the school-room.”

The Chief Clerk of the Forestry Department has sent the following notes :—

“19,618 forest trees are recorded to have been issued for planting on Arbor Day by the Forest Department. The following species of trees were issued : albizzia, cypress, carob, stone pine, slated gum, mulberry, wattle, lycium, washing-tonia, dodonea, Aleppo pine, farnesian acacia, Persian lilac, acacia, canary pine, jacaranda, flowering ash, Judas tree, casuarina, chestnut, walnut, thuja, ailanthus, tung oil, poplar and grevillea.”

The number of trees issued for planting throughout the Island during the 1930 Arbor Day Celebrations shows a considerable increase over the numbers recorded in previous years.

This increase gives an indication that both Greeks and Turks are taking a greater interest in tree-planting which is all to the good of the forestry and agriculture of the Island.

The Cyprus Raisin Industry.

THE NEED FOR BETTER METHODS OF PREPARATION.

RAISIN making in Cyprus is an important industry in the Limassol and Paphos districts. Almost every village in the vine-growing areas of these districts makes a certain quantity of raisins. The grapes generally used for raisin making are the same as those used for wine making, but preference is given to the grapes from vines grown in more or less deep soils as these are considered to produce wine of inferior quality and are, therefore, more profitably utilized in raisin making.

Raisin making usually commences about the 20th of August and continues up to the 15th of September.

The value of the industry to the Island may be seen by a glance at the following table showing the quantity, value and destination of raisins exported from Cyprus during the year 1929.

Export of Raisins, for the Year ended 31st December, 1929.

Destination.	Quantity. cwt.	Value. £
United Kingdom ..	4,297	2,981
Bulgaria	145	114
British East Africa ..	8	7
Castellorizo	167	131
Palestine	40	33
Dodekanesia	174	125
Sudan	1	2
Egypt	3,211	2,223
Belgium	195	119
France	28,699	19,844
French Possessions ..	419	274
Germany	3,013	2,247
Greece	341	230
Holland	487	325
Italy	45,757	31,498
Lithuania	575	367
Roumania	9,553	6,623
Syria	4	3
Turkey	1	1
United States of America	—	1
Total.. ..	97,087	£67,148

The quantity and value of the exports during the last five years are given in the following statement :—

Year.	Quantity cwt.	Value. £
1925	67,908	43,972
1926	66,069	58,198
1927	87,949	86,508
1928	97,377	79,351
1929	97,087	67,148

The home-made raisins are usually made by the villagers for their domestic use and such receive in their preparation better attention than the sun-dried raisins. A selected choice of grapes is made and more care and attention in drying is given. The grapes are carefully dried on the roofs of the houses. They are given a certain amount of protection by the use of clean

clothes. After drying they are carefully cleaned of all inferior and foreign materials, then they are laid aside for home use. It is estimated some 50 tons are thus produced.

Sun-dried raisins in Cyprus are usually the product of old and exhausted vines growing on poor soils and the grapes are allowed to dry naturally on the vines during the hot day season. These raisins are of small size, shrivelled, of a light blue colour but with an agreeable sourish flavour. The quantity produced in any year in this manner varies according to season but the average production is approximately 84,000 okes per annum.

The ordinary Cyprus raisins in competition with raisins from other countries are unable to retain a steady position on the market on account of their lack of quality, being tough skinned, lack flavour and contain large pips.

The main reason for this lack of quality is on account of the defective methods of preparing generally practised throughout the Island.

Selected and well prepared Cyprus raisins have been very favourably reported upon, therefore, there is no reason why Cyprus should not compete with any country as far as quality is concerned, provided the best varieties of vines suitable for raisin-vine are grown, especially seedless varieties.

The Department of Agriculture have given particular attention to the matter and suitable vines have been imported and are being propagated for general distribution. It will take some time, however, until the results from these varieties are evident on the market, but in the meantime all raisin makers should devote their energies to improve generally the standard of raisin making.

Cyprus raisins as they are made at present are exported for industrial purposes. The price, therefore, varies with the needs of the industry using them. As these industries do not exclusively use raisins but other different products rich in sugar as well, it will be seen that when there is an abundance or lack of the other products the demand and price for Cyprus raisins fluctuate accordingly. During the 1927-1928 season Cyprus raisins were sold for industrial purposes at 5 to 6cp. per oke. During the 1928-1929 season there was only a limited demand for raisins for industrial purposes and the price was as low as 3cp. per oke. While during the season 1929-1930 the price of raisins fell as low as 1½cp. per oke and has just recently risen to 3 to 4½cp. per oke.

Until a good confectionery variety of raisin is produced it will hardly be possible to market at a remunerative price.

Scant attention is at present given to improving the methods of raisin making in accordance to the demands of the market for a better quality product and unless something is done to improve the quality the Cyprus raisin industry will never be able to command better prices.

The following methods are recommended to those who are desirous of improving this product :—

“During vintage care should be taken to pick ripe grapes only and not as is usually done mix ripe, unripe, indifferent and over-ripe grapes together.

Bruised and waste berries should be removed from each bunch of grapes.

The grapes should be immersed in a bath containing a cold alkaline solution consisting of carbonate of potash, soda or wood ashes 7° to 8° Baumé concentration. This solution should be measured by a Baumé hydrometer.

In addition, a small quantity of olive-oil 1 to 1½ per cent. should be added to the solution. The olive-oil must be of good quality and should be added gradually while stirring the whole solution in order to obtain an emulsion.

If at any time while using the bath the oil comes to the surface, the mixture should be thoroughly stirred.

The following alternative solution is recommended. 6 per cent. of carbonate of potash and 2 per cent. of good olive-oil. This solution is considered to improve the quality and colour and take a shorter time in drying.

The grapes are next exposed to the sun for drying. The drying place should be thoroughly clean. Paving stones are suitable but ordinary reed mats are best as the raisins are kept free from earth and collection after drying is easier. The drying usually takes six to seven days.

Waterproof cloths should be available for protection against rain or dew. After drying the stalks should be removed from the raisins by hand. The raisins are then placed in a special store room which should be fumigated with sulphur before use in order to destroy any insects or fungus liable to attack the raisins.

Special attention should be given to cleaning and grading. Raisins are graded according to size and quality and should be free from all foreign substances. Any rotted, bruised or scorched raisins should be removed.

Care should be exercised in packing and no pressure should be exerted while packing.”

EDITORIAL AND ADVERTISEMENT NOTICES.

All communications for publication should be addressed to the Editor "Cyprus Agricultural Journal," Department of Agriculture, Nicosia.

Communications are invited, written on one side of the paper only. It should be understood that no contributions or specimens can be returned unless postage is prepaid.

Copies of the "Cyprus Agricultural Journal" can be obtained on application to the District Commissioners, or to the Department of Agriculture, price 3*cp.* per number, or by post 3½*cp.*

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SCALE OF ADVERTISEMENT CHARGES.

A uniform reduced rate is charged for all advertisements which covers their insertion in the English, Greek and Turkish issues respectively.

As special efforts are now being made to increase the circulation of the Journal in the Colony and Overseas it may be regarded as a valuable medium for advertising.

The following are the rates in force :—

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Advertisements should be written on one side of the paper only, and should reach the Editor, "CYPRUS AGRICULTURAL JOURNAL" at least 15 days before the date of issue.

The "Cyprus Agricultural Journal" is published in January, April, July and October, on or about the 15th of the month.

The Editor does not necessarily endorse the statements or opinions expressed in contributed articles, the responsibility for which rests with the authors.

Aerial Tuberation of Potatoes.

THE photograph reproduced below shows a potato plant which produced potatoes on the stalks above the ground.



Aerial tuberation of potatoes.

Six such plants appeared in the potato field of Mr. Aristotelis Papouté of Trakhona; similar plants have also appeared in the garden of Mr. Giragosian at Deftera.

The production of mal-formed tubers around the main stem often occurs but the production of so large and well developed tubers on the branches as are shown on the photograph reproduced is not usually met with.

Such formation of tubers on the stalk is described as aerial tuberation. This mal-formation is caused by some form of injury to the growing plant such as damage by wind, implements or trampling of animals.

A planting experiment was tried with the aerial tubers and the following results obtained :—

These tubers although they germinated later than the ordinary tubers planted at the same time, showed better growth and produced tubers entirely underground.

For a while growth was more vigorous than that of the other potatoes although both kinds received the same care and attention. At harvest time the quantity and quality of the resultant yield of the crop from the seed of the aerial tubers was not as good as that of the normal seed.

It is believed, however, that from similar experiments carried out elsewhere, aerial tubers if well preserved are capable of producing vigorous potato plants.

Asparagus.

ASPARAGUS is a wholesome vegetable and is in general use in many countries. Its importance and value as a vegetable ranks high. In Cyprus there is a good demand and a ready sale for the asparagus placed on the local market although the product marketed is of inferior quality. Proper methods of cultivation of this lucrative vegetable are rarely practised and in many cases unknown to the market gardeners of the Island and good varieties are seldom grown. The asparagus usually sold is the product of a native wild species which is found growing in waste lands or forests. The asparagus marketed in Cyprus is very slender, sometimes woody and leafy and it lacks good flavour.

In spite of this poorness of quality it is readily sold at comparatively attractive prices. In view of this there is no reason why, if a good species of garden asparagus was cultivated properly, it should not prove a lucrative proposition to the grower.

Garden asparagus is an erect growing species and it produces edible shoots of excellent quality. There are several other species of a climbing or drooping character but they are of an ornamental type. Asparagus in Cyprus is ready for the market at a time of the year when most green vegetables are

going out of season and for this reason it provides a welcome change and should be a valuable addition to the Island's vegetable supply.

Asparagus is a hardy plant, it stands both drought and cold well, it suffers very little from pests and diseases and it requires comparatively little attention when properly established.

The following notes have been prepared for the guidance of those who contemplate taking up the cultivation of this plant or for those who already grow the plant to some extent but wish to improve or extend their gardens:—

Asparagus can grow on any soil but thrives best on light loam or slightly sandy soils. The bud bearing roots or crowns should be buried by a layer of soil, therefore, any soils, with a tendency to retain moisture are unsuitable for asparagus cultivation and should be avoided unless they can be well drained. For this reason heavy clay soils are not recommended. The condition of suitable soils may be further improved by heavy applications of farmyard manure.

Nothing is more conducive to successful cultivation of asparagus than the liberal use of organic manures. The asparagus fields or gardens require heavy manuring in the first instance. Chemical fertilizers can never replace organic manures but they may be used as supplementary. When inorganic fertilizers are used a slow decomposing type should be preferred. An application of common salt greatly adds to the flavour of the resultant crop.

The land on which it is proposed to plant asparagus should be prepared in the autumn or early winter and the ground ploughed or dug two or three times. Before the final cultivation the farmyard manure should be applied and dug in. The depth of cultivation should not be less than ten inches. The ground should be ready for planting not later than the middle of February.

Asparagus is best propagated by seed. Seeds are sown in March, April or May in a well prepared light seed bed either broadcast or in lines. If in lines the lines should be spaced twelve inches apart.

After the seeds have germinated and attained a height of three inches, the plants are singled and a space of six to eight inches left between each plant. Frequent hoeing is necessary during the summer months in order to keep the weeds down. An occasional irrigation is applied as required to supply moisture to the young growing plants.

During October or November the aerial parts of the plant are cut down and the roots left in the seed beds to pass the winter.

The asparagus field or garden should be prepared in the winter months as already described and in early spring or towards the end of February, if weather and climatic conditions permit, the land should be divided into plots of approximately five feet wide. Between each plot a narrow path eighteen inches should be allowed. In each plot two lines are marked three feet apart and on these lines the spot each plant will occupy is marked at intervals of fifteen to twenty-four inches, alternating on the lines. A hole eight inches in diameter and eight inches deep is made at each spot marked. The roots or crowns whether produced from the seed bed or obtained from some other source are carefully selected and planted in the holes, one root to each hole. Great care should be taken not to injure the roots during planting. The roots should be spread around and in no way allowed to be twisted.

The crowns are covered with soil to a depth of two inches and when the shoots begin to grow the covering of soil should be increased until it becomes level with the surface of the whole plot.

The above method is the most suitable for establishing an asparagus field under garden conditions. Under field conditions there is no difference in the practice to be followed in the early preparation of the land but when planting takes place it is not necessary to plot the field. Furrows to a depth of eight inches are thrown open by a double mould board plough. The bottom of the furrow is levelled and the crowns of asparagus placed on the level bottom at a distance of eighteen inches apart. The furrows should be six feet apart in the rows in order to allow space for subsequent use of field implements. The covering of the crowns is done gradually as it is done under garden conditions.

During the first season some nice shoots can be harvested but the grower should be careful to avoid weakening the crowns by removing shoots from a weak root. Time and opportunity should be given to the roots to allow them to store as much food as possible. The quality and quantity of a crop depends upon the amount of reserve stored in the roots. In the summer months the field should be kept free from weeds and the surface soil hoed. As the first year is the establishing period of the plants all operations should, therefore, be confined to shallow cultivation and weeding.

In the next and subsequent springs the field should be manured thoroughly with farmyard manure, then cultivated and if the production of white shoots is desired the plants must be earthed over. The height of this earthing up may be up to eight inches. On large plantations a plough is used for this work in the rows,

At the end of the harvesting season the asparagus beds are thoroughly cultivated and fertilized. The ridges are levelled and hoeings given during the remainder of the growing season. The ingredients of the fertilizers will help to build up a new reserve in the roots and if there is not sufficient moisture in the soil during this period to make the fertilizers available to the plant an irrigation may be applied followed up by a thorough hoeing.

The shoots which grow after the cutting season, develop into aerial parts and produce flowers and fruits. As soon as the fruits turn red the aerial parts are removed and destroyed by burning. After removing the aerial parts the field is either lightly harrowed or left over until next spring when farmyard manure is again applied and the land thoroughly cultivated.

A well established and properly tended plantation may produce profitable crops from fifteen to twenty years. The average period on which one may safely rely for a good crop is a period of ten years as the production of an old asparagus plantation is poor in quality and quantity.

It is best not to harvest anything in the first year and reduce as far as possible any harvesting in the second and third years. This practice will induce the production of large and well developed crowns of good quality asparagus.

Harvesting should continue daily and preferably in the morning during the season of harvesting of the mature crop. When harvesting white asparagus the shoots should be cut as soon as they appear above the soil and it may be necessary to go over the field twice a day. The shoots are taken out either by hand or by a special knife. When taken by hand the soil is removed, the shoot grasped deep in the soil and with tight twist it is severed from the crown. The knife used is a specially grooved one fitting the shape of the shoot. The grooved side of the knife is lightly pressed against the shoot and glided along down to the crown. Unless due care is paid there is the risk of wounding the crown with the knife.

Conservation of Grass in Transportable Form.

GRASS CAKES.

THE following is an abstract from an article on "Pasture Research" by H. E. Woodman, M.A., Ph.D., D.Sc., School of Agriculture, Cambridge University, which was published in Volume VI., No. 12, of *Tropical Agriculture* :—

"A future generation may witness the utilisation of large areas of grassland for the sole purpose of production of protein concentrate. Pastures, having the appearance of vast lawns,

may be cut over regularly and frequently throughout the growing season, the nutritious, protein-rich produce being preserved for feeding to animals in winter confinement, along with balancing home-grown feeding stuffs like meadow hay, cereals and roots. The mode of preservation may either be artificial drying, followed by pressing into cakes or grinding to the roughly powdered form, or it may consist in ensiling the freshly cut grass.

During the 1927 season, Imperial Chemical Industries, Ltd., collaborating with the School of Agriculture, undertook the systematic cutting of some acres of grassland in the vicinity of their factory at Billingham. The cutting was so regulated that the herbage was always taken in its young leafy condition. Soon after cutting, the grass was dried down in steam-heated troughs, and later the dried product was compressed into cakes by hydraulic presses. These dried grass cakes measured 6 inches by 5 inches by 1 inch, and were of such a density that 40 cubic feet of the compressed material weighed 1 ton. They had kept the green colour of the fresh grass and had a pleasant fragrant smell. They contained 8 per cent. moisture and 25 per cent. of protein. When moistened with water, they swelled up considerably and disintegrated. Sheep, bullocks and dairy cows ate them eagerly, both in their dry and soaked conditions. It is of interest to record that samples of these dried grass cakes have been kept for more than two years in an open box under laboratory conditions without displaying any deterioration whatsoever in respect of colour and smell. Their moisture content is still in the neighbourhood of 8 per cent.

Critical feeding tests on these dried grass cakes were made at Cambridge, and two main conclusions were drawn: (1) The process of drying does not in any way impair the high nutritive properties of the fresh grass. (2) The dried grass cakes can successfully replace oil cakes in the winter rations of dairy cows and fattening bullocks. It is permissible to hope, therefore, that dried grass cakes will shortly find their way on to the agricultural market and be used as a substitute for oil cakes in the winter rations of farm animals. The problem of devising suitable appliances for cutting and drying down young grass is being studied by Imperial Chemical Industries, Ltd., who are looking forward to placing the process on a commercial footing during the season of 1930.

The advantages of such a side-line in grassland husbandry are manifold: (1) Dried grass cake is an almost ideal concentrated food for farm stock. It is highly digestible and is rich in protein, lime, potash, phosphate, vitamins and plant pigments. Pasture grass conservation implies a twelve, instead of a five months' pasture season. (2) On the basis of the 1928 winter

prices, 1 ton of dried grass cake would be worth £9 15s. for its feeding value alone. It would also have a high manurial value of about 27s. per ton, compared with linseed cake at 31s. and maize meal at 11s. per ton. (3) The advantages of such a system of grass conservation during war time are so obvious as to need no emphasis. During the Great War, one of the most acute problems was to find protein concentrates for farm animals. This difficulty need never arise again, since now it is recognised that the farmer's best protein-concentrated food can be grown on his own farm. Further, the system enables the cuttings from playing fields and sports fields to be usefully conserved. (4) Grass conservation should prove an incalculable boon to droughty parts of the Empire like Australia, where the herbage shrivels away to nothing during bad seasons, and thousands of sheep perish miserably. Why should not the irrigation areas of Australia be used for the intensive growth of young grass to be continually dried and pressed into cakes for transport to the less fortunate droughty regions? Grass cakes will keep for years and are an ideal form for storage and transport. The day may be envisaged when they will be transported between colony and colony and favoured regions will produce them for transport to the more needy parts of the Empire. (5) By grass conservation it will be possible to augment very considerably the available supplies of concentrated feeding stuffs, the shortage of which at present not only prevents the attainment of an all-round standard of intensive animal husbandry in Great Britain, but also causes the high prices ruling for oil cakes and cereal foods.

It is clear that the artificial drying of young grass must always remain an industrial, or semi-industrial process. For that reason, the method of ensilage is likely to make a more direct appeal to the farmer. It is of interest to record that satisfactory tests have been carried out in this connection at Cambridge. Three small silos were filled respectively with grass cuttings from certain college playing fields; with a mixture of grass cuttings and dried sugar beet pulp; with a mixture of grass cuttings and oat straw chaff. The results were satisfactory in every case, the silage being readily eaten by stock. This side of the problem of grass conservation, however, is being studied further at the present time."



DISTRICT NOTES.

By the Commissioner, Kyrenia.

A Review of Agriculture in the Kyrenia District for the Quarter ended 30th June, 1930.

SINCE my last report I have been able to visit most of the villages in the district, and there is no doubt a general air of despondency exists among the farmers due to the very low prices offered for nearly every commodity produced. However, villagers look forward to better times which it is hoped will be brought about by the Trade Mission now visiting those countries where new markets may be opened up.

The chief crops that should have mention at this time of the year are as follows :—

WHEAT, BARLEY AND OATS.

These crops have been reaped and the yield is considerably in excess of last year. There have been signs of "rust" in parts of the district and although it has been alleged some crops have been totally destroyed, I have been informed by the Agricultural Supervisor that this is a gross exaggeration. Observations on a report in regard to the low price of cereals and the improvement of the milling industry, etc., were submitted to the Honourable the Colonial Secretary on the 20th May. Propaganda has been made urging everyone to use flour produced from Cyprus grown corn in larger proportions.

The Cereal Committee to represent this district has been chosen with great care; each member is a practical farmer and it is hoped that its work will be of real value.

COCOONS.

A good deal has been said lately with regard to silkworm "seed" and the production and price of cocoons. Despite the fact that producers could obtain only about half the amount of "seed" generally used, it is interesting and satisfactory to record that the production of cocoons amounts to nearly the same as last year. Whether this is the result of continually urging producers to pay greater attention to ventilation and less overcrowding or merely to force of circumstances, I do not know; but the fact remains that a large amount of "seed" will not necessarily result in a big production of cocoons unless great care is exercised.

TOBACCO.

I am informed that approximately 40,000 to 50,000 okes of Latakia and 20,000 to 25,000 okes of cigarette tobacco will be produced this year. Tobacco intended for cigarettes has been planted more extensively in the eastern part of the district, and it is worthy of note that more interest and care is being taken in the production of this crop.

CAROBS.

The yield of this product is expected to be twice that of last year.

OLIVES.

It is estimated that this crop will be three-fourths less than last year, but this can only be expected after the large yield of 1929.

VINES.

Three experimental vineyards have been planted and in some parts of the district definite steps are being taken to revive an old industry.

CITRUS FRUITS.

The trees, with the exception of mandarines, were heavily laden with blossom, and a good crop of lemons is expected.

APRICOTS AND PLUMS.

The yield of both of these fruits has been considerably less than last year. The Agricultural Department has endeavoured to persuade villagers to have new varieties grafted. This advice has not been taken readily, with the result that there is still little demand for these fruits of such an inferior quality.

CUCUMBERS, BEANS AND TOMATOES.

These products with the exception of beans, which were badly attacked by blight, are as usual very plentiful. Tomatoes, however, have not improved in quality or shape.

ALMONDS.

There was a large amount of blossom but the trees were subsequently attacked by blight, in consequence of which the crop is likely to be smaller than usual.

NURSERY GARDENS.

The Nursery Garden at Kyrenia continues to improve under the supervision of Mr. Kyprianides, who shows great interest in his work. 700 fruit saplings were issued on payment and 2,200 various plants to school gardens gratis.

The demonstration garden at Lapithos is looking more orderly and has been planted out to limes of several varieties.

RAT DESTRUCTION.

This work is being carried out satisfactorily and farmers who were at first very antagonistic towards the methods now employed, are gradually realising that poison is the only means of exterminating this pest. The Mukhtar of Bellapaise, who was sceptical as to the efficiency of the poison, caught a rat in a trap and fed it on a poisoned bait as used by the Rat Destruction Officers. The rat died in less than an hour. Needless to say that village authority is convinced, and has done good work by broadcasting his experience.

NICOSIA RACES.

A WELCOME revival of public interest in racing was distinctly noticeable at the spring meetings which were held on April 20th (Easter Sunday) and May 4th. The attendance was large and enthusiastic on both days but especially on the latter occasion at which an added attraction was provided in the result of a big sweep which had been organised some weeks previously in connection with the race for the Skouriotissa cup. The weather was fine and cool on both days, the course was in excellent order and the racing was of a high standard.

His Excellency the Governor and Lady Storrs were interested spectators at both meetings and at the conclusion of the second day's racing Lady Storrs kindly presented the Skouriotissa cup to Mr. R. J. Roe whose grey horse "Tally" (by Temeraire out of an Arab mare), ably ridden by Mr. A. Petris, had won the big event of the day.

No less than five races were won by Mehmet Hussein Kutchuk Eff., whose three horses were brought out in excellent form. The syndicate also achieved such success as will, it is hoped, encourage each of its four members to register his own colours for future meetings and thus help to increase the size of the fields and provide a greater spice of competition.

The standard of the three-year-olds entered in the four-furlong scurries indicated once more the improvement which has followed the importation by the Government of thoroughbred sires, and the action of the Race Committee in awarding a small prize to the breeders of the winners of these races is calculated to maintain and encourage the interest of villagers in the potentialities of horse-breeding.

It is satisfactory to note that as a result of the financial success of the spring meetings the Race Committee have decided to increase the stakes at the autumn meeting and still further increases are expected in the spring of 1931. It has also been decided to distribute an increased percentage of the shilling sweepstakes tickets which are sold on the course prior to each race.

RESULTS APRIL 20TH.

1st Race.—The Larnaca Handicap.—4th Class Horses, £12.

About 5 furlongs.

1st The Syndicate's ARETHOUSA 158 lb. 2nd Tr. M. Yousof's PSYCHE 138 lb. 3rd L. Cpl. H. Mehmet's BUTTERFLY 142 lb.

6 started.

2nd Race.—The Kyrenia Handicap.—For 3-year-old Colts and Fillies, £12 and £5 to breeder of winner. 4 furlongs.

1st Djemal Eff.'s NELL GWYNNE 141 lb. 2nd The Syndicate's MAZDA 141 lb. 3rd M. H. Kutchuk's LAURANT 144 lb.

6 started.

3rd Race.—The Famagusta Handicap.—2nd Class Horses, £15. 7 furlongs.

1st M. H. Kutchuk' ABDUL FETTAH 154 lb. 2nd S. Michaelides, DOXA 156 lb. 3rd Faiz Eff.'s PIERETTE 135 lb.

4 started.

4th Race.—Nicosia Handicap.—3rd Class Horses, £15. 6 furlongs.

1st M. H. Kutchuk's JIHANYANDI 156 lb. 2nd R. J. Roe's TALLY 141 lb. 3rd Tr. Yorgho Luka's DILBER 148 lb.

7 started.

5th Race.—The Larnaca Handicap.—4th Class Horses, £15. 6 furlongs.

1st The Syndicate's ARETHOUSA 168 lb. 2nd Tr. M. You-souf's PSYCHE 136 lb. 3rd Fahri Ali's NADJIE 126 lb.

5 started.

6th Race.—Hurdle Race, £12.

9 furlongs.

1st M. H. Kutchuk's JIHANYANDI 134 lb. 2nd F. Hji Mustafa's TEMPTER 136 lb. 3rd D. Sergt. Major Faik's MAJOR 162 lb.

4 started.

RESULTS, MAY 4th.

1st Race.—The Juvenile Plate.—For 3-year-old Colts and Fillies which have never previously won a race, £15. About 4 furlongs.

Colts 144 lb., Geldings and Fillies 141 lb.

1st The Syndicate's MAZDA 141 lb. 2nd R. J. Roe's TICKLER 144 lb. 3rd G. Barrett's MASCOT 144 lb.

4 started. Time 0.56".

2nd Race.—The Polemidia Handicap.—4th Class Horses, £12. 5 furlongs.

1st George Savva's HELENE 130 lb. 2nd Fahri Ali's NADJIE 126 lb. 3rd Tr. M. Yousouf's PSYCHE 150 lb.

5 started. Time 1.17".

3rd Race.—The Athalassa Handicap.—2nd Class Horses, £18.
7 furlongs.

1st Th. Georghiades' PLATINUM 126 lb. 2nd S. Michaelides' DOXA 158 lb. 3rd A. Faiz Eff.'s PIERETTE 126 lb.

3 started. Time 1.41½".

4th Race.—The Skouriotissa Handicap.—3rd Class Horses, £18 and a cup presented by Cyprus Mines Corporation. About 6 furlongs.

1st Mr. R. J. Roe's TALLY 153 lb. 2nd Tr. Yorgho Luka's DILBER 154 lb. 3rd F. Hji Mustafa's TEMPTER 147 lb.

5 started. Time 1.24".

5th Race.—The Acheritou Handicap, for 3-year-old Colts and Fillies, £15. About 4 furlongs.

1st M. H. Kutchuk's LAURANT 126 lb. 2nd The Syndicate's MAZDA 150 lb. 3rd G. Barrett's MASCOT 131 lb.

3 started. Time 0.55".

6th Race.—The Tally Ho Hurdle Race, £15.
About 9 furlongs.

1st M. H. Kutchuk's JIHANYANDI 144 lb. 2nd F. Hji Mustafa's TEMPTER 136 lb. 3rd Dist. Srgt. Major Faik's MAJOR 152 lb.

5 started.



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EDITORIAL NOTES.

THE abnormal conditions of the world's markets at the time this note goes to press render the expression of any opinion as to trade prospects of any agricultural products of Cyprus extremely speculative.

Merchants and producers are now fully aware of the fact that the trade depression does not only affect Cyprus alone, but is world-wide. Although some products have been very hard hit, it is believed conditions in Cyprus are considerably better than they are in many other countries. Cyprus is not a one-crop country, its products are many and varied and although prices have been low, most Cyprus products are at least finding a market and the balance of the import and export trade is being maintained.

* * * *

Heavy rains were experienced in September and it is feared that these rains, which were followed by a period of drought and warm weather, will be to the detriment of both livestock and crops. Such climatic conditions are particularly favourable for parasitic infestation of sheep and goats. If the drought is prolonged the sowing of cereals will be delayed.

* * * *

An officer of the Agricultural Department has been stationed in the Pitsillia area with headquarters at Agros.

* * * *

The full report of the Cyprus Government Trade Mission is being printed separately in the three languages and copies may be had on application to the Government Printer. Brief extracts from the report are published elsewhere in this issue,

Raisin making commenced early in August and was completed approximately during the second fortnight in September. Climatic conditions this season have not been favourable. Heavy rains were experienced during the height of the raisin making season and serious damage was caused to the raisins in many cases.

The demonstrations carried out by the Department of Agriculture with the use of carbonate of potash were very successful and there is likely to be a big demand for this material next season.

The use of carbonate of potash in the solution besides hastening the drying, improves the appearance of the product.

* * * *

There are possibilities for a trade in hazelnuts with the United Kingdom.

This is a product for which there could be a good demand either in the United Kingdom market or in other important markets but there are two factors preventing further extension of the trade.

One is that growers will not desist from the practice of gathering the nuts before they are fully ripe and storing them in their green capsules. The result of this practice is that the kernels shrink and become rancid. The other is that the varieties grown are not those for which there is a demand.

The Department of Agriculture is investigating the matter and steps are being taken to endeavour to produce the desired varieties demanded by the trade.

* * * *

In order to explore further possible avenues of overseas markets for Cyprus oranges, the Department of Agriculture is sending a trial consignment this season to Singapore.

* * * *

The 1930 vintage was in full progress by the 20th September; this is a little later than last year. The condition of the crop was good but it is feared the September rains will influence the quality of the wines. Production is much the same as last year.

* * * *

Large quantities of seed wheat have again been exported to Greece and Turkey this summer. Representatives from the above countries have spent several weeks in the Island visiting the wheat-growing villages searching for the particular varieties desired by their respective countries.

The Flax Scutching Mill at Zodia is being operated again this year under Government management in connection with Empire Marketing Board's grant for development of the flax industry. Deliveries of flax straw are considerably less than last year. The price offered for best quality straw is 55 paras per oke as compared with 70 paras per oke last year.

Good prices have been maintained for linseed, and there is no falling off in the area being planted under flax for seed.

* * * *

The Agricultural College, Nicosia, still maintains its usual measure of popularity and everyone interested in this, Institution is eagerly following the progress being made in regard to the establishment of the new College at Morphou on the site acquired for the Central Experiment Farm. The Cyprus Agricultural College has now been 20 years in existence.

* * * *

The Colony Prize for the best School Garden in the Island for the year 1930 was divided between Mr. M. L. Christodoulides, Schoolmaster of Kokkini Trimithia, Nicosia District, and Mr. S. Myrianthousis, Schoolmaster of Omodhos, Limassol District.

* * * *

The frontispiece of this issue shows a general view of Lefka. At Lefka are grown those superb luscious oranges of the very best quality which it is hoped some day will be placed on the United Kingdom market in regular supplies when the difficulties of transportation are overcome.

In the background of the photograph reproduced is the main mountain mass of the Troödos range. Chionistra, the summit, which is 6,406 feet above sea level, is usually capped in snow while at Lefka, less than 15 miles distant and at sea level, the orange trees are in full bearing.

* * * *

The new edition for 1930-31 of the International Directory of Pedigree Stock Breeders is now published and is on sale. The publishers of this Directory are the Vernon Press Limited, 23 Fleet Street, London, E.C.4. The Directory besides being a Register of Livestock Breeders in all Continents is a most comprehensive, interesting and useful publication to all those interested in livestock. Besides being publishers of Pedigree Livestock Records, the Vernon Press Limited act as advisors to any purchasers of pedigree livestock in the United Kingdom or in any other country, without any charge or commission being debited,

The International Dairy Congress, 1931, will be held at Copenhagen during the period July 14th to 17th. The preliminary programme of this Congress has come to hand and copies may be had by those interested on application to the Chief Veterinary Officer.

* * * *

Guaranteed pure and wholesome milk can be obtained in Nicosia. A local dairyman has established a milk cooling and bottling equipment. It is expected that other dairymen will soon follow this progressive step if consumers are not slow in showing their appreciation of the advantages of a pure and attractive milk supply.

* * * *

In the note entitled "Cyprus at the Belfast Empire Week" published in the July, 1930, issue of this Journal, reference was made to the display organised by the Empire Marketing Board in connection with the Belfast Empire Week.

Attention has been directed to the fact that the Cyprus exhibit at Belfast was entirely staged by the Trade Commissioner for Cyprus in London with the assistance of the Department of Overseas Trade who act as agents of the Empire Marketing Board in all practical details of exhibition work.

In order to remove any possible misapprehension on the matter this note is inserted.

The Cyprus Trade Mission.

THE following brief extracts from the report of the Cyprus Government Trade Development Mission and its visit to Syria Palestine, Egypt and Greece are published for the information of general readers:—

"The Mission sailed from Larnaca on the 15th June last and visited Syria, Palestine, Egypt and Greece in succession, completing its labours at Athens on the 26th July.

The Mission made every effort, compatible with the limited time at its disposal, to explore every avenue capable of fostering Cyprus export trade—the dominating factor in the economic life of the Island—and of advertising, as far as possible, its resources and possibilities, including the amenities of its summer and winter resorts.

The Mission made particular enquiries into the economic situation of each country visited, more especially in regard to the extent the world depression in trade had affected the purchasing power of the respective countries. It was found that, in all these countries, adverse trade balances existed and in consequence the granting of credits were being obtained with more difficulty, if at all, causing a shortage of currency in the hands of

the inhabitants, thus limiting their purchasing power. The methods employed to counteract adverse trade balances may be said to be more or less identical in all the countries visited, viz :—

(a) Endeavours are being made to limiting, as far as possible, requirements to those obtainable within national boundaries, and every encouragement is being given by the respective Governments to promoting local production, trade and enterprises.

(b) The development of the tourist traffic is the subject of strong and systematic Government support.

(c) Every opportunity is taken to bring home to the agricultural and trading communities the benefits and advantages of co-operation and the value of trade organisation.

Our attention was repeatedly drawn, in each country visited, to the apathy of the Cypriot exporter to the importance of modern methods of grading, packing and presentation of his produce. Also to his failure to cater for the present demands of the market, as well as to come into personal contact with his clients abroad which omission strengthens the position of his competitors.

It is, on the other hand, gratifying that the actual quality of Cyprus produce is, generally speaking, appreciated and enjoys a good reputation.

SYRIA.

The term "Syria" is loosely used to describe the areas under the French Mandate, which is divided up into (a) the Lebanese Republic, (b) the Syrian State, which comprises the former provinces of Aleppo and Damascus, (c) the Alaouites Territory, (d) the autonomous "Sandjak" of Alexandretta, within the Syrian State with certain special privileges, and (e) the small Jabel Druze State.

The area of Syria, subject to the French Mandate, is approximately 100,000 square miles and has an estimated population approaching 3,000,000. The estimated area of the Lebanese Republic is about 4,300 square miles, with an estimated population of 579,778.

Syria ranks ninth in importance in our exports and twenty-second in our imports. Syria, like Cyprus, is an agricultural country and grows more or less the same crops. Normally, Cyprus cereals could hardly expect any demand from Syria where prices for wheat and barley run lower than in Cyprus, unless in the possible event of failure of crops.

But a wider possibility of disposal of wheat and barley in Syria for *seed* purposes will be opened up when the improved methods of farming, contemplated by her Agricultural Department, will have been put into operation, as Cyprus has already gained a reputation for the production of seed wheat and barley.

There are favourable prospects of trade in :—

- (a) POTATOES.—Winter, almost exclusively imported from Cyprus. The quality is admitted to be the best on sale. The summer crop of Cyprus cannot apparently compete with the local summer crop.
- (b) BRICKS.—If the manufacture in Cyprus is increased.
- (c) WINES.—But keen competition from France, Syria and Palestine.
- (d) VINEGAR.
- (e) CHEESE.
- (f) GYPSUM.—Demand limited by the use of local lime and cement, and the imposition of the octroi (municipal tax) in the interior.
- (g) TOBACCO.—For blending. In 1929, 2,000 hectares were cultivated, yielding 1,100,000 kilos of tobacco. There are 19 cigarette factories.

PALESTINE.

Palestine, west of Jordan, covers about 9,000 square miles, and the population, excluding that of Transjordan, approximates a million.

Palestine occupies the tenth rank in importance in our exports and the twenty-ninth in our imports. For the year 1929, the former amounted to £37,043 and the latter to £4,635. There is steady, though small, increase in both.

Palestine, too, is an agricultural country and the crops are in the main similar to those of Cyprus.

The share of Cyprus (£37,043) in the imports of Palestine (£5,000,000) is infinitesimal.

The low percentage is noticeable in certain individual items viz :—

- (a) OXEN.—£1,200 against a total of some £34,000, or say $3\frac{1}{2}$ per cent.
- (b) CHEESE.—£66 against a total of approximately £21,000, or say 3 per cent.

The decline in the import of oxen from Cyprus since 1926 was carefully enquired into by the Mission ; the fall in values is shown by the following statement :—

					£
1926	..	..	..	..	23,101
1927	..	..	..	..	10,114
1928	..	..	..	..	2,060
1929	..	..	..	..	1,200

Oxen are imported from Syria, Bulgaria and Roumania, at much cheaper rates. Overland supplies from Syria enjoy exemption from import duty, and the presence of Jewish butchers in Bulgaria, who supervise purchases to secure that the animals are suitable for certain Jewish "rites," renders competition by Cyprus against Bulgaria difficult, the more so in the absence of direct steamship communication between Cyprus and Palestine.

There should be good prospects for increased trade in :—

(a) CHEESE.

(b) POTATOES.—The imports from Cyprus in 1929 amount to £24,543 against a total of about £52,000, or say 47 per cent.

(c) ONIONS.

(d) LENTILS.

and possibilities in :—

(e) FRUITS. } For hotels, especially during the tourist
(f) POULTRY. } season.

(g) GYPSUM.—To some extent.

(h) TOBACCO.—For blending.

The most outstanding aspect of agricultural development in Palestine is the citrus cultivation on the littoral. The area under plantations is now said to cover 100,000 donums and the further land suitable and available for citrus, some 250,000 donums.

Exports average from two-and-a-half to three million boxes of 150 fruits each, annually. In four years' time, it is estimated that the production will amount to five million boxes, and in ten years to ten millions.

The cost of shipment of oranges to the United Kingdom from Jaffa in 1929 was 1s. 10½d. per box.

If and when the Haifa harbour works are completed, it is hoped that it may be possible to ship oranges from that port to England at a reduced cost, with less risk of damage and loss.

The Mission visited the Assis Citrus Juice Factory at Tel-Aviv, which prepares an excellent citrus drink known as "Jafforange." This Company has an up-to-date plant and a similar factory would be an asset to the citrus industry in Cyprus.

The grape and wine industries also receive considerable attention in Palestine.

The banana is cultivated in the warmer parts more particularly near the larger towns. The variety grown is principally the dwarf Cavendish kind, but the fruit is not usually equal in size or quality to the Canary banana. This cultivation is

extending and the production is now exceeding the demands of the population and producers are looking further afield for new markets. The Director of Agriculture, Palestine, and the growers are very anxious to initiate an export trade with Cyprus.

EGYPT.

The area of Egypt is about 363,181 square miles, and the population exceeds 14,000,000. Egypt is, therefore, our Island's most potential customer.

Egypt ranks third in importance in Cyprus exports. She would have headed the list in 1929 were it not for the large export of carobs to the United Kingdom (£141,767) and pyrites ore to Italy (£137,219). Egypt takes the twelfth place in our imports, amounting in 1929 to £60,083.

In the case of some articles, the high percentage of imports from Cyprus as compared with the grand total, would show a firm and steady hold on the Egyptian market :—

(a) Pomegranates ..	£22,246	nearly	100 %
(b) Carobs	£14,583	„	96 %
(c) Vinegar	£3,876	„	83 %
(d) Gypsum	£11,393	„	83 %
(e) Mules	£15,044	„	73 %

Among certain retailers in Egypt, the fear is entertained that pomegranates are hard hit by the heavy import duty imposed by the new Customs tariff, *i.e.*, 150 mills. per 100 kg. (in lieu of 30 mills.) but it is to be hoped that their apprehensions are exaggerated.

The normal increase in the native population can only be expected to enhance the consumption of carobs inasmuch as they are used for food and in the preparation of a beverage among the poorer classes.

Prospects are quite hopeful as regards vinegar in that the importation of chemical acetic acid is restricted, as being detrimental to human health, under the new Customs tariff.

The Mission carefully and closely examined the decrease in exports of Cyprus gypsum to Egypt.

The causes of the decrease in the imports of Cyprus gypsum are :—

(a) The fact that it is a low priced article overloaded with duties.

(b) Keen competition from the factories at Cairo, Ismailia and Mariout.

There are good prospects for increased trade in :—

	Percentage of Imports from Cyprus (1929).					
Wines	22.6 %
Potatoes	17 %
Oranges	18 %
Lemons	4 %
Cheese	7 %
Oxen	10 %
Grapes	10 %
Beans and peas	26 %
Fruits :						
Apricots	16 %
Plums	17 %
Cherries, etc.						

In most items, a much larger share could be safely secured to Cyprus if the exporter would take the trouble to meet the activities of his foreign competitors on up-to-date lines.

Another crop it is hoped to market in Egypt is tobacco, and if the efforts now being made to produce a quality acceptable to Egyptian manufacture prove successful, an appreciable source of income to the Island will be realised.

Tourism has not been overlooked by the Mission. Egypt is the most appropriate recruiting centre for summer and winter visitors, but it was repeated to us, time after time, that Cyprus is not yet sufficiently known and that her indisputable attractiveness should be properly advertised.

We are convinced that trade between Cyprus and Egypt is yet far from having reached its zenith. There is ample scope and opportunity for Egypt becoming the largest customer of Cyprus. No country is self-sufficient and Egypt is far from being an exception. We are persuaded that Cyprus could, with improved methods of marketing, contribute very much more to satisfying Egypt's requirements.

GREECE.

Greece has an area of 49,036 square miles and a population of 6,204,684.

Greece ranks fourth in importance in Cyprus exports and takes third place in its imports. Both exports and imports are on the increase as is shown below :—

	Exports to Greece.		Imports from Greece.	
	£		£	
1928	..	130,896	..	119,364
1929	..	186,085	..	132,515

The principal exports to Greece in 1929 were :—

Potatoes	..	..	..	..	..	68,309
Cotton, raw	..	..	..	..	..	37,652
Barley	..	..	..	..	..	29,734
Lemons and Oranges	..	..	..	..	..	16,041

The principal imports from Greece in 1929 were :—

Chemical manure	..	..	..	..	..	63,775
Tobacco, unmanufactured	..	..	..	..	..	27,936
Soap	..	..	..	..	..	12,573

Certain Cyprus exports command a fairly high percentage of the total imports into Greece and are capable of further expansion :—

						In 1929,
Potatoes	..	..	..	..	..	26 %
Barley (seed)	..	..	..	..	..	19 %
Cotton (raw)	..	..	..	..	..	16 %

Subject to adequate propaganda and representation in Greece there should be also good prospects for oranges and lemons, cattle, wheat (seed), cotton seed, linseed, onions and possibly oats and poultry.

Greece is, at the present time, our best market for potatoes. There has been constant increase since 1925 :—

						£
1925	..	..	..	..	..	2,334
1926	..	..	..	..	..	7,021
1927	..	..	..	..	..	40,713
1928	..	..	..	..	..	46,740
1929	..	..	..	..	..	68,309

Although essentially an agricultural country, Greece is, probably with greater rapidity than Egypt and Palestine, becoming highly industrialised. The influx of Greek refugees from Asia Minor is making itself felt both in agriculture and industry, and particularly the latter, so that, probably for some years to come, Greece will continue to be an importing country as many of her requirements will have to be satisfied by importation. With certain improvements in the selection, packing and presentation of Cyprus products, and certain readjustments of interests to secure co-operation and reciprocity, the Greek market should be capable of considerable expansion in regard to imports from Cyprus.

CONCLUSIONS.

SYRIA.

We are of opinion, in regard to Syria, that the prospects of the further development of trade are not, as was anticipated, so promising as in the other countries visited. Syria is largely self-supporting in agricultural commodities, its demands for products like potatoes and barley being largely seasonal or due to crop shortages. As agriculture becomes developed in Syria, the demands for ordinary farm products may even become less. It may be possible, however, for Cyprus to supply certain products, in which it specialises, in increased quantities, such as *e.g.*, tobacco for blending, wines, vinegar, bricks (ordinary and asbestos), etc. Mules will doubtless continue to be in demand.

PALESTINE.

The absence of regular and direct steamship communication between Cyprus and Palestine accounts, to a great extent, for the little trade intercourse between the two countries. Whilst the trade figures for the last five years would not seem to justify, as a business proposition, a regular steamship service, yet we feel convinced that if such communication existed, considerable further trade would be developed.

We consider, however, that every encouragement should be given to facilitate better communication between Palestine and Cyprus so that a freer exchange of goods may result. Our attention was repeatedly drawn by the trade organisations to the adverse balance of trade between Palestine and Cyprus, amounting in 1929 to some £32,500. Perhaps a small steamer, of say 1,000 tons or even less, plying regularly between Famagusta, Larnaca and Limassol with Haifa and Jaffa would meet present requirements and do a good deal to build up a permanent trade between the two countries.

EGYPT.

So long as Egypt continues to concentrate its attention on cotton to the neglect of other crops, the prospects of trade with that country are good, but were a definite and sustained effort made to produce in Egypt the produce now imported from other countries, there would be a falling off in demand in that market. This possibility should not be lost sight of, as investigations are being made in this direction and the set-back cotton has received the last year or two will, it is needless to remark, favour any efforts made to render Egypt more self-supporting in production.

This contingency renders it, however, all the more necessary that our position in regard to Egypt's trade should be consolidated and that we should take such steps as may be considered necessary to retain the trade we already possess as well as increase the field of this important market by improving the methods of distribution and marketing.

GREECE.

As has already been shown, Greece is an important market for Cyprus produce, but it is one that requires definite organisation, in so far as the distribution and marketing of produce are concerned.

The expansion of trade with Greece, and through Salonica with Central Europe, is, as has already been stated, one contingent on direct and regular steamship communication.

GENERAL OBSERVATIONS.

The Mission, in surveying the data collated in the countries visited, desires to record that, in its opinion, the universal trade depression is more acutely felt in the countries visited than in Cyprus and that there is, therefore, no justification for any undue spirit of pessimism. Both Egypt and Greece, our principal markets, still require to import produce from Cyprus, but we must face the probability that the price level may need to be lowered before trade can resume its former course and position in regard to normality and stability.

We recommend that the producer should exercise the strictest economy in production so as to reduce production costs to the lowest possible limit, and also that he should give especial attention to the improvement of the quality of his produce, even at the expense of quantity, if necessary. We recommend that the merchant should study more closely the requirements of his markets, improve his methods of grading, packing and marketing, so as to meet the requirements of his customers on sound and up-to-date business lines. We advise co-operation with producer and buyer so as to reduce, as far as may be possible, overhead charges and maintain that personal contact so necessary in these days of competition in production and marketing."

The full report is being published in English, Greek and Turkish by the Government Printer from whom copies can be had on application. For those interested in the trade and development of Cyprus we strongly recommend them to secure a copy as it has only been possible to publish very brief extracts in this Journal.

The recommendations by the Mission to the Government are also contained in the report.

Cyprus Agricultural College, Nicosia.

ANNUAL REPORT FOR THE COLLEGE YEAR 1929-1930.

DURING the year under review, 20 Greek and 8 Moslem students were enrolled as follows :—

Year.				Greek.		Moslem.
1st	..	..	..	5	..	2
2nd	..	..	..	6	..	6
3rd	..	..	..	9	..	—
Total				20	..	8

Of the Greek students only two in the first year's course succeeded in obtaining the required average marks, in the second year only one student obtained the required average marks while in the third year six students qualified for the College Certificate.

Of the Moslem students in the first year's course one passed in all subjects and in the second year's course four passed in all subjects.



Students receiving instruction in pruning of vines at Saitta.

Both Greek and Moslem students who failed in certain subjects will be re-examined again in such subjects in October before the opening of the new session.

During the year under review several excursions were made to different parts of the Island. During these excursions practical demonstrations were given and botanical collections were made.

In the competition for the prize offered by His Excellency the Governor, ten collections each consisting of more than one hundred specimens were made by members of the Botany Club. The prize winner was Hussein Djinkiz.



Student with dried specimens of wild flowers.

No alterations in the College Curriculum have been made during the year and no alterations are contemplated until the transfer from Nicosia to the new College at Morphou takes place.

The following students have passed the third year's final examination and have received the College Certificate as provided for in the Syllabus of the College :—

					Total Average Marks.
1.	Nicolaos M. Drakos	..	..	..	93.19%
2.	Aristodimos Ioannides	..	..	..	89.01%
3.	Michalakis Papadopoulos	..	..	..	88.52%
4.	Christos Karaviotis	..	..	..	86.20%
5.	Manolis N. Pierides	..	..	..	85.76%
6.	Gregorios Kelogrigoris	..	..	..	81.97%

The following second year's students have passed the examinations qualifying for the third year's course :—

					Total Average Marks.
1.	Aristides Petrou	..	..	..	84.88%
2.	Hassan Djinkiz	..	..	..	85.28%
3.	Osman Jemal	..	..	..	85.00%
4.	Hussein Djinkiz	..	..	..	81.40%
5.	Seit Ahmed	..	..	..	79.00%

The following first year's students have passed the examination qualifying for the second year's course.

					Total Average Marks.
1. Christos Papadopoulos	..	..	..	..	80.98%
2. Costas Agathodorou	..	..	..	..	78.17%
3. M. Vehbi	..	..	..	..	85.27%

The following students of the College passed the Government Ordinary Examination in English :—

1. Kyriakos Agathodorou	..	..	..	over 75%
2. Costas Patsalides	..	..	..	under 75%

The annual College entrance examination was held on the 24th of September, 1930, and the following candidates have qualified for admittance to the first year's course :—

					Total Average Marks.
1. Christos Neophytou	..	..	..	..	93%
2. Evangelos Iacovou	..	..	..	..	77%
3. Epaminondas Haji Avraam	..	..	..	..	73%
4. Constantinos Evstathiou	..	..	..	..	72%
5. Costas Stavrou	..	..	..	..	71%
6. Christoforos G. Tofarides	..	..	..	..	70%
7. Evelthon Christodoulou	..	..	..	..	70%
8. Minas Photiou	..	..	..	..	69%
9. Neoptolemos Apostolides	..	..	..	..	67%

There were 88 Greek and 20 Moslem applicants for examination for nine vacancies. The nine vacancies were for Greek candidates. There were no vacancies for Moslem students this year.



EDITORIAL AND ADVERTISEMENT NOTICES.

All communications for publication should be addressed to the Editor *Cyprus Agricultural Journal*, Department of Agriculture, Nicosia.

Communications are invited, written on one side of the paper only. It should be understood that no contributions or specimens can be returned unless postage is prepaid.

Copies of the *Cyprus Agricultural Journal* can be obtained on application to the District Commissioners, or to the Department of Agriculture, price 3cp. per number, or by post 3½cp.

Annual subscription payable in advance 12cp. for residents in the six District towns; outside the District towns 15cp.; Overseas subscription 18cp. (2/-).

SCALE OF ADVERTISEMENT CHARGES.

A uniform reduced rate is charged for all advertisements which covers their insertion in the English, Greek and Turkish issues respectively.

As special efforts are now being made to increase the circulation of the Journal in the Colony and Overseas it may be regarded as a valuable medium for advertising.

The following are the rates in force :—

COVER—Full page, 1 year or 4 insertions	...	£2 15 0
INSIDE PAGES—Full page, 1 year or 4 insertions		2 8 0
" Half page "		1 4 0
" Quarter page "		12 0

For one insertion only, one-fourth of above charges.

All charges payable in advance.

PRIVATE ADVERTISEMENTS.

For Wants, Articles for Sale or Exchange, Notices of Meetings, Events, etc., for the first 16 words, 2s. Exceeding 16 words but not exceeding 32 words, 4s. For every additional 8 words 6cp.

These charges include insertion in the English, Greek and Turkish issues.

Advertisements should be written on one side of the paper only, and should reach the Editor, *Cyprus Agricultural Journal* at least 15 days before the date of issue.

The "*Cyprus Agricultural Journal*" is published in January, April, July and October, on or about the 15th of the month.

The Editor does not necessarily endorse the statements or opinions expressed in contributed articles, the responsibility for which rests with the authors.

Report on Samples of Cyprus Locoum (Turkish Delight).

BY THE EMPIRE MARKETING BOARD.

1. Four samples of Cyprus Turkish delight were recently forwarded to the Empire Marketing Board by the Trade Commissioner in order that the opinion of the trade might be obtained as to their suitability for the British market.

In the course of the enquiries the confectionery buyers of a number of the large London stores were interviewed. With one exception, none of the firms to whom the samples were submitted was engaged in the manufacture of Turkish delight. All the firms consulted were engaged in a high or middle-class trade.

2. Trade opinion may be summarised as follows :—

(1) SAMPLE A.

Texture.—The texture of the pieces flavoured with rose was fairly satisfactory : the pieces flavoured with bergamot were condemned as being tough and unpalatable.

Flavour—Rose.—Good, but not sufficiently pronounced.

Bergamot.—Not commended ; in one case it was stated that the product would be unsaleable.

Price.—The only estimate given was 6*d.* per lb. landed. The remainder of the buyers interviewed stated that in its present form the product was unsaleable, chiefly because of the unsatisfactory package and the use of peanuts.

(2) SAMPLE B.

Texture.—The texture was too tough and the pieces should be half the size.

Price.—No estimates were given. In its present form this brand would be unsaleable.

(3) SAMPLE C.

Texture.—Very fair but a little tough and somewhat irregular. The pieces were of a suitable size.

Flavour.—Good but not sufficiently pronounced. The use of almonds in this sample was the subject of favourable comment.

Price.—Estimated about 1*s.* per lb. delivered at the warehouse, but improvement of the package a necessary condition.

(4) SAMPLE D.

Texture.—Good.

Flavour.—Good.

Packing.—Most of the buyers interviewed disapproved of the use of silver paper wrappings.

Price.—The estimated price was from 1*s.* to 1*s.* 2*d.* per lb. delivered at warehouse. If pistachio nuts were used the price would be about 1*d.* per lb. more.

MARKET REQUIREMENTS.

3. Samples C and D seem the most likely to find favour at the moment, but even these would not be acceptable in their present packing. Much more substantial containers are necessary as the climate of this country is too damp for cardboard packages which should, in no circumstances, be used.

The type of package required is the wooden drum, box or tin, containing $\frac{3}{4}$ lb. and $1\frac{1}{2}$ lb., with a good interior packing of damp-proof material, *e.g.*, waxed paper. As a further precaution against damp it was suggested that the cases in which the boxes are packed should be lined with tin. If the container is not damp-proof, the sugar instead of remaining powdery, becomes caked and discoloured and the appearance of the product is spoiled; damp also affects the flavour. It was noticeable that, with the possible exception of Sample D, all the samples were more or less affected in this way.

Peanuts should on no account be used in this confection; the introduction of this type of nut suggests poor quality. Slightly grilled almond or pistachio nuts are permissible, but the quantity used should in any case be small, since too many nuts tend to spoil the flavouring. It should be noted that a large section of the public appear to prefer plain Turkish delight. Rose and lemon flavourings are most in favour.

It was generally stated that there should be little difficulty in finding a market for genuine Turkish delight, provided that the supply is regular and the quality consistently high.

There appears to be a demand for Turkish delight throughout the year, but requirements are heaviest during the Christmas season. To meet the Christmas demand, offers should be made and samples submitted during the period May to July, and shipments should arrive in this country about the middle of September.

Report on *Lavandula Stoechas* Oil from Cyprus.

BY THE IMPERIAL INSTITUTE.

THE oil which is the subject of this report was forwarded to the Imperial Institute by the Director of Agriculture and is referred to in his letter No. 356/30 of the 24th April, 1930.

The species of *Lavandula* yielding the oil grows abundantly in a wild state on open hills in Cyprus, and it was stated that if the oil proved to be of commercial value considerable quantities could be distilled in the spring of each year. The present sample had been distilled from flower-heads with about four inches of stem, collected from a locality between Korno and Lefkara in the Larnaca District, and the yield of oil was 1.05 per cent.

DESCRIPTION.

The sample consisted of about 1½ lb. of oil which was rather turbid owing to the presence of moisture. After filtration, the clear oil was of a pale yellowish-brown tint, and had a camphoraceous odour somewhat resembling that of rosemary but not so fragrant.

RESULTS OF EXAMINATION.

The oil was found to have the following constants, which are shown in comparison with corresponding figures previously recorded for *L. Stachas* oil :—

	Present Sample.	Recorded Figures.
Specific gravity at 15/15°C	0.9503	0.9427 to 0.962
Optical rotation aD	+25.32° at 21°C	+12.76° to +49.93° at 20°C
Refractive index nD20°C	1.4690	1.4676 to 1.4810
Acid value	1.4	0.7 to 5.2
Ester value	34.1	7.7 to 28.2
Ester value after acetylation	70.2	47.1 to 69.0
Solubility in 70 per cent. alcohol	soluble in 1.9 vols.	soluble in 2.1 and 2.2 vols.*

These results show that the constants of the present sample are in general normal for *L. Stachas* oil, but the ester value is somewhat higher than the recorded figures.

COMMERCIAL VALUE.

The oil was submitted to a firm of perfumery manufacturers in London, who furnished the following report :—

“In our opinion this is an oil that has possibilities only as a deodorant or for perfuming cheap soaps. It represents in its chemical and physical constants a Spanish rosemary oil. There are possibilities for this oil, provided that in price it can come in at between 1s. 8d. and 2s. per lb. delivered.”

REMARKS.

It will be seen from the foregoing results that although this oil is not a product of high value, there may be an outlet for it in the United Kingdom if it can be offered at a moderate price.

* Two oils only.

Warble Flies.

By H. M. MORRIS, M.Sc., F.E.S., *Government Entomologist.*

THESE insects are well known to all stock raisers, butchers and tanners owing to the serious injuries and losses which they cause.

The flies usually lay their eggs on the hair of the legs of animals, generally on the hind legs below the hocks. The eggs are laid singly and glued to a hair.

These eggs hatch in two to six days and the minute larvæ on hatching bore their way through the skin of the leg, after which nothing is known of their movements for some months. In the late summer the larvæ, by that time about a quarter of an inch in length, are probably to be found in the œsophagus of the animals, and from there they pass to the back where they appear from early in October onwards throughout the winter.

On arriving at the back the larvæ make a hole through the skin, through which they breathe, and they then grow rapidly, becoming full grown, in the case of goats, from about mid-January, most larvæ having reached this stage by the end of February although some may still be found in the animals' backs until the middle of March. In the case of cattle the larvæ appear in the back from about the end of December and become full grown from about the middle of February, but larvæ may still be found in cattle until about the end of March.

When it is full grown, the larva forces its way out through the hole it has made in the skin and falls to the ground, where it crawls under a lump of earth or into a crack in the ground and becomes a pupa. From the pupa the adult emerges in May and the life cycle is then repeated, there being only a single generation in the year.

The general prevalence of warbles has sometimes led to the belief that, if not actually beneficial, they are necessarily present, and that nothing can or should be done to prevent their occurrence.

This view is entirely erroneous, as most butchers and tanners very well know.

The presence of the warble larvæ causes the animals in which they live a considerable amount of pain and discomfort over a lengthy period and this pain and discomfort can not fail to be reflected in a reduced yield of milk and poorer condition generally, and the loss so caused may be considerable. In addition, the hide of a badly warbled animal is seriously damaged and may be almost useless, and the meat from the most valuable parts of the carcass may be rendered unfit for use.

It has been estimated that the annual loss in the value of hides only in Great Britain alone is £500,000, so that it is obvious that the damage due to these insects is very serious.

The warble fly can only be effectively attacked and destroyed during the period when it is in the backs of the animals. During this time the larvæ can be killed by the application of suitable insecticides, which can safely be done without any injury to the animals.

The most convenient material for use in Cyprus is an extract of tobacco, which is prepared as follows :—

Four okes of tobacco dust (any finely broken up residue of tobacco leaves) and one oke of hydrated lime should be shaken up well in ten okes of water.

This material should be used as soon as it is made as it loses strength if kept longer than about six days, and it must always be kept in a well corked vessel.

In using this material first remove the crust or scab which often partly covers the hole in the skin. Then apply the tobacco extract with a soft cloth or brush. The material should be stirred or shaken from time to time to keep it well mixed, and it must be very thoroughly applied to all the warbles.

This treatment should be carried out as soon as the warbles have made holes in the skin, about the end of December in goats or the end of January in cattle. The treatment should then be repeated about every three weeks up to the middle of March for goats and the beginning of April for cattle.

Instead of tobacco extract, nicotine may be used and is prepared as follows :—

Nicotine sulphate (40 per cent.)	..	50 drams.
Hydrated lime..	.. ..	1 oke.
Water ..	.. ..	10 okes.

This material is used in the same manner as the tobacco extract and the same precautions must be observed.

Instead of using these insecticides, the warbles may be squeezed out through the hole in the skin, by hand, but this method is unsatisfactory when there are many warbles to be dealt with. There is danger of bursting the warbles inside the back of the animal, which may cause injury to the animal, and the treatment by means of insecticides is more satisfactory.

The Rearing of Silkworms.

DEMONSTRATIONAL WORK IN GIRLS' SCHOOLS DURING THE SCHOOL YEAR 1929-1930.

DEMONSTRATIONAL work in the rearing of silkworms was again carried out in girls' schools during the school year 1929-1930. This work was carried out under the supervision of the Government Sericultural Inspectors and silkworm seed was issued gratis by the Department of Agriculture for the demonstrations. One hundred and sixty-two girls' schools in representative parts of the Island participated in this work, of which 123 were Greek-Christian girls' schools and 39 were Moslem girls' schools.

In all, 1,991 school girls attended the demonstrations and much useful and practical sericultural knowledge was gained by the school girls.

Each school taking part in the demonstrations were supplied with a set of equipment consisting of one wooden incubator, one thermometer, wire layers and necessary fittings. The cost of this equipment was borne by the village school committee and arranged through the Department of Education.

In villages where a suitable room for silkworm rearing can be obtained and where there is a sufficient supply of mulberry leaves every effort is made to give the schoolmistresses encouragement to instruct the school girls in proper methods of silkworm rearing.

There was keen competition amongst schoolmistresses in the competition for prizes offered by the Department of Agriculture for the best results obtained and judged on quantity and quality of production of cocoons per ounce of silkworm seed used.

The Manager of the Cyprus Silk Filature, Yeroskipos, Paphos, kindly consented to judge selected lots for prizes and the final awards were made on his report.

The results obtained during the school year, 1929-1930, were exceptionally good for Cyprus.

In one school the production of fresh cocoons was over 9 okes per dram or 72 okes per ounce of seed, in 68 schools 7 to 8 okes per dram or 56 to 64 okes per ounce, in 59 schools 6 to 7 okes per dram or 48 to 56 okes per ounce, while in 20 schools it varied between 4 to 5 okes per dram or 32 to 40 per ounce. In the remaining 14 schools the production was below 4 okes per dram or 32 okes per ounce this was due to various unavoidable

causes or misfortunes but nevertheless the production was not lower than 27 okes per ounce which is considerably higher than the average quantity of cocoons produced by the villagers.

This high production should serve as a demonstration to the villagers that yield of cocoons does not depend so much upon the quantity of silkworm seed used but more upon the skill and systematic methods followed in the rearing of silkworms.

The following prizes were awarded by the Department of Agriculture to schoolmistresses during the school year 1929-1930 :—

Name of Schoolmistress.	Residence.	Prize.
Miss Meyil Omer	Ayios Epiktitos	1st £6.
Miss Hattidjé Refik	Nicosia (Victoria Lycée)	2nd £5.
Miss Servet Omer	Kato Arodhes	3rd £5.
Miss Maria Vasiliou	Ayios Andronikos.	4th £4.
Miss Chrystallou Constantinou	Polis	5th £3.
Miss Niobi Papadopoulou ..	Kritou	6th £3.
Miss Anastassia Pavlidou ..	Eptakomi	7th £2.
Miss Joulia Constantinou ..	Kalopanayiotis	8th £1.
Miss Terpsichori F. Georgaki	Kato Pyrgo	9th £1.
Miss Evanthia Papagregori	Yeroskipos	10th £1.
Miss Seidé Nigiär	Ayios Nikolaos (Paphos District)	11th £1.
Miss Chrystallou Hj. Antoniou	Ayia Trias (Yialousa)	12th £1.
Miss Eleni Zachariadou ..	Vasa (Kilaniou)	13th £1.
Miss Eminé Ahmed	Komi Kebir	14th 10s.
Miss Sureyà Mehmed Fadil ..	Deftera	15th 10s.

Peppermint Oil.

THERE is a good demand for peppermint oil on the world's markets. The oil produced must, however, be of sufficient good quality to command a good price and compete with oil from other sources.

Of the genus *Mentha* there are a great number of varieties; hybridisation, however, takes place easily. All varieties and hybrids contain menthol varying in quantity and quality.

Mentha piperita which is considered a hybrid is most appreciated by perfumers and is grown to a great extent in England. Two types of *Mentha piperita* are cultivated namely "Black mint" and "White mint." The former is the hardier and gives a larger yield of oil, the latter gives a lower yield of finer quality oil.

The peppermint oil produced in England is considered the finest produced and bears the same relation to oils produced in other countries as is the case with lavender oil.

America is the largest producer of peppermint oil. In Germany plantations have been established and a fine oil is produced. A fair quantity is produced in France, Japan and, to a certain extent, China also produces large quantities.

The following varieties of mint are found in Cyprus growing in a wild state :—

Mentha pulegium (Penny Royal) found in abundance along river banks and damp places throughout the Island.

Mentha longifolia, *Mentha spicata* and *Mentha silvestris* found usually in damp places and along river banks.

Mentha Cypria which is considered very closely related to *Mentha longifolia*.

The two varieties *Mentha viridis* (Spear mint) and *Mentha rotundifolia* (Apple mint) are cultivated to a small extent.

During the year 1927 and again in 1928 plants of the English peppermint varieties *Mentha piperita* were imported into the Island for acclimatization. These plants were grown on the mountains at Trikoukkià Nursery Garden and also on the plains at Nicosia Nursery Garden. Trial distillations have been made from time to time and samples of the oil have been sent to the Imperial Institute for examination and report.

The first sample sent to the Imperial Institute was in 1926 and the following remarks were made in the report on the peppermint oil sent :—

“This investigation has shown that the present sample of peppermint oil from Cyprus is of abnormal character and contains only a low percentage of menthol. Such oil would probably not be readily saleable in the United Kingdom and in any case would only realise a low price.

The inferior quality of the oil may be due to the variety of peppermint plant from which it was obtained but before any definite conclusion is drawn it would seem desirable to carry out another trial distillation of the plants and to forward the oil for further examination, together with herbarium specimens of the plants. If the results confirm those now recorded it would be advisable to obtain a new stock of plants from this country for cultivation if it is proposed to produce the oil on a commercial scale for export.”

The sample of oil above referred to was distilled from peppermint grown in Nicosia.

Again in 1927 further samples were sent from peppermint grown on the plains at Nicosia and from peppermint grown at Trikoukkià on the hills and both samples were from plants of the same variety, *Mentha piperita*, and the following remarks were made in the report of the Imperial Institute :—

“ Results of this examination show that the two oils differ from one another in character and are both much inferior in flavour to the peppermint oils of commerce. Such oils would be of comparatively low value and it seems doubtful whether they would be readily saleable in competition with oils of better quality. In view of these results it would seem advisable, if it is desired to produce peppermint oil in Cyprus for export, to adopt the suggestion made in Imperial Institute’s report, dated the 9th February, 1927, that a new stock of plants should be obtained from this country for cultivation.

It is of interest that the herbarium specimens were identified at Kew as *Mentha piperita*, L., as it is from forms of this species that the commercial peppermint oils are obtained.”

Further samples distilled from plants of the imported variety *Mentha piperita*, grown at the same places and under the same conditions as the samples forwarded in 1927 were sent to the Imperial Institute for examination and report early this year and the following report by the Imperial Institute on the peppermint oil sent is quoted :—

“ The sample of peppermint oil which is the subject of this report was forwarded to the Imperial Institute by the Director of Agriculture, and is referred to in his letter No. Agr. 609/28 of the 24th April, 1930.”

The oil had been distilled from plants grown at Trikoukkià and it was desired to ascertain its quality.

DESCRIPTION.

The sample consisted of about 160 cc. of a clear pale brownish-yellow oil, with a rather pungent peppermint-like aroma which was not very agreeable and differed considerably from that of English and American peppermint oils,

RESULTS OF EXAMINATION.

The oil was found to have the following constants, which are shown in comparison with the corresponding figures for the oils from Cyprus previously examined at the Imperial Institute (*see* reports dated 9th February, 1927, and 30th January, 1928), those recorded for English and American peppermint oils, and the British Pharmacopœia requirements for peppermint oil:—

	Present Sample from Trikoukkia	PREVIOUS SAMPLES FROM CYPRUS				English Peppermint Oil	American Peppermint Oil	British Pharmacopoeia requirements
		Reported on in 1928		Reported on in 1927				
		Nicosia	Trikoukkia					
Specific Gravity at 15/15°C.	0.9288	0.961	0.928	0.937	0.900 to 0.912	0.899 to 0.915	0.900 to 0.920	
Optical Rotation at D.	-3.79°	+14.5°	-10.9°	+22°	-23° to -33°	-20° to -35°	-2° to -35°	
Refractive Index at 20°C.	1.463	1.482	1.468	1.482	1.4600 to 1.4640	1.4600 to 1.4635	—	
Acid Value	1.4	—	—	—	—	—	—	
Ester Value	100.7	—	—	—	—	—	—	
Esters (expressed as menthol acetate), per cent.	35.6	—	—	—	3 to 21	5 to 12	Not less than 5	
Ester Value after acetylation	213	132.5	140.0	93.0	—	—	—	
Total acetylisable constituents (expressed as menthol), per cent.	70.6	41.0	43.5	27.9	50 to 68	48 to 63	Not less than 50	
Solubility in 70 per cent. alcohol at 15°C.	Not soluble even with 13 vols.	—	—	—	—	Soluble in 3 to 5 vols. sometimes with opalescence.	Soluble in 4 vols.	

COMMERCIAL VALUE.

The oil was submitted to a firm of essential oil distillers in London, who furnished the following report :—

“ The oil would be of very little value as it contains a foreign odour reminding one of tansy or penny royal. From a flavour standpoint this would make the oil useless. We had not sufficient oil to find out whether it could be separated by fractionation or otherwise, but in any event we do not think it would find a ready market. Its value would not be more than 3s. to 3s. 6d. per lb., and then only in limited quantity.”

The firm suggested that the character of the oil might be due to other plants having been harvested and distilled together with the peppermint.

REMARKS.

The results of examination show that the constants of the present oil differ considerably from those of the samples of Cyprus peppermint oil previously examined at the Imperial Institute, including the oil from Trikoukkià submitted in 1927. The amount of menthol in the latter oil was somewhat low whereas the present sample contains an unusually large amount of this constituent; the amount of esters present is also abnormally high, and the oil possesses poor solubility in alcohol. The value of peppermint oil chiefly depends on its aroma and flavour. and in spite of the higher percentage of menthol, the present oil is inferior in these respects to the previous samples. If the present oil was distilled from plants from the same stock as the previous sample of 1927 it would seem that a deterioration of the plants has occurred during this period which has affected the quality of the oil.

From the above reports it will be observed that there is a vast difference in the results of distillations.

The plants from which the oil was distilled at Nicosia and Trikoukkià were of the same botanical source; therefore, the marked differences between soil and climatic conditions of Nicosia and Trikoukkià must account for the difference in quality of the two samples.

However, the difference between the samples in comparing the oil examined in 1927 with that examined in 1930 can only be accounted for by the deterioration of the plants.

The cultivation of mint and production of peppermint oil is a matter which requires further investigation and experiment in Cyprus in order to produce oil of sufficient good quality to compete on the world's market. The Department of Agriculture propose to import a new stock of plants and experiment with the cultivation in different localities and under varying conditions and to experiment further with trial distillations.

The production of essential oils within the Empire is a matter of great importance and further experiment may yet prove Cyprus as an important source of peppermint oil.

New Cotton Variety.

RESISTANCE TO PESTS.

THE following note abstracted from *The Times Trade and Engineering Supplement* dated June 21st, 1930, should be of interest to cotton growers in Cyprus :—

“ A new variety of cotton has been produced at the Empire Cotton Growing Corporation's experimental station at Barberton. It is called “ U 4,” and is said to resist the dreaded jassid pest, which has destroyed many hopes in South Africa and Rhodesia. The new cotton even beats the bollworm by withstanding attack and producing a new crop of bolls when the worm has vanished. It succeeds because it is vigorous enough to feed the worm on its first bolls and then throw fresh lot for the farmer.

The new variety was explained by Sir James Currie, chairman of the corporation, who has been touring the cotton-growing areas of the Transvaal, Mozambique, Swaziland, and Basutoland. The object of his visit was to review the cotton position generally, but in particular to see under cultivation the new variety from which so much is expected. Sir James said that “ U 4 ” appeared to be accidental, a hybrid between some cotton from Uganda and the South African variety. The quality was excellent and would secure a good price in the world's markets. Experts at work on selection are getting distinctly encouraging results. As to the grading of cotton at Durban, every care, Sir James said, was being exercised and everything was being done to secure the highest possible price for the grower.”



Cultural Notes on Almonds.

BY OSMAN NOURI, *Assistant Inspector of Agriculture.*

SOIL REQUIREMENTS.

THE almond tree can be cultivated with success on most types of soils but it best grows on deep loams of medium character. Excess of clay or sand will not bear a profitable tree.

CLIMATE.

The almond tree thrives best in temperate climates in fairly moist situations. Early frost and dry hot winds in the flowering season prevent fertilization of the flowers and the crop does not set properly in such situations. Once the fruit is formed it will stand the heat, although excess of this may cause premature dying off of the leaves which in turn reflects on the quality of the nut.

PREPARATION OF THE SOIL.

The roots of the almond tree make the best use of adverse soils conditions, therefore, special preparation of the land for an almond plantation is not absolutely necessary. The land if already in fair condition is once ploughed a few weeks before planting. In Cyprus this is done during November–December, then the land is harrowed and levelled. The land is then marked out for planting. The distance recommended which should be allowed between each tree is 16 to 20 feet each way according to the soil conditions. Square or hexagonal plan may be adopted, the former plan allows more space to the trees. A hole $2' \times 2' \times 2'$ is opened on the previously marked spots to receive the almond plants and a supply of well rotted manure or leaf mould should be placed in each hole.

GERMINATING THE SEED AND PLANTING.

The almond seed should be stratified in sand 3 to 4 weeks before actual planting, preferably single strata. The seed should be watered every day regularly. An ordinary box of $2' \times 3' \times 6''$ or similar size may be used for stratifying the seeds. Towards the end of the third week and during the fourth week the seeds germinate and the radical breaks the shell. At this stage it is most suitable for planting out. The seedlings are then removed from the sand and placed in a tray, taking care not to break the white radical when transferring to the field.

PLANTING OUT.

The holes previously opened are then filled with soil and manure or leaf mould, half and half, well mixed together. The level of the soil in the hole is left about 4 inches below the land surface. A small hole of $3'' \times 3'' \times 3''$ is opened with the hand or a garden trowel in the centre and the seedling almond is carefully placed into it, the radical pointing downwards and covered. If the soil is not sufficiently moist or the season is dry, each hole should be well watered after planting the almond.

CARE AND CULTIVATION.

The almond shoot will appear above the soil in about two weeks. When the shoots reach a height of 12 to 15 inches the surrounding soil is hoed and weeded. When young plants attain a height of 24 inches it is necessary to stake them in order to keep their growth straight. Stakes of 1 inch diameter of good quality wood are used. Several side branches may shoot out, these should be cut off in order to keep the stem single up to 3 feet. From this height the tree should be allowed to branch and form its head. The almond tree has a deep root which searches the soil for food and moisture, but if the climate is very droughty it is better in the first few years to make an occasional irrigation either by buckets or by channels from a running stream or reservoir. After each irrigation the soil should be hoed in order to preserve the soil moisture. Annual cultivations are made once or twice a year in order to keep the land clean and preserve the moisture. No special pruning is applied to almond trees, except removal of dead branches and thinning out crowded twigs.

Sheep, Goat and Pig Returns, 1930.

THE following statement compiled from returns furnished by the Treasurer are the final figures giving the number of sheep, goats and pigs in each district for the year, 1930 :—

District.		Sheep.		Goats.		Pigs.
Nicosia	..	73,306	..	64,832	..	8,357
Larnaca	..	40,667	..	23,950	..	2,881
Limassol	..	24,285	..	39,945	..	4,253
Famagusta	..	93,336	..	41,903	..	7,376
Paphos	..	43,267	..	41,553	..	10,553
Kyrenia	..	15,297	..	23,417	..	1,057
Total	..	290,158	..	235,600	..	34,477

The following is a comparative statement of the totals for the last two years :—

Year.		Sheep.		Goats.		Pigs.
1929	..	272,709	..	226,850	..	32,836
1930	..	290,158	..	235,600	..	34,477
Increase	..	17,449	..	8,750	..	1,641

The returns for 1930 show an increase of sheep, goats and pigs over the preceding year.

DISTRICT NOTES.

By the Commissioner of Kyrenia.

A review of Agriculture in the Kyrenia District for the Quarter ended 30th September, 1930.

THE despondency of the farmer to which I referred in my last report is still very apparent, and contrary to the idea expressed in some quarters that there is no financial crisis, conditions, at any rate in this district, are going from bad to worse.

At the beginning of the current year certain optimism prevailed as there was every prospect of there being a good yield of most crops. With one or two exceptions this has proved to be the case, but the lack of demand and the price offered are causing the agricultural class great concern for the future. Furthermore, in addition to the lack of trade, the farmer is unable to obtain advances from the merchants as hitherto, for according to the latter they must be more cautious on account of the low prices offered in overseas markets. Some good may, however, emanate from the present state of affairs, for farmers are at last realising the futility of hap-hazard borrowing from the merchant by whom they have been ruthlessly exploited for generations. Under these circumstances it is hoped the value of co-operation may be felt and lead to the spread of the co-operative movement which is still so lacking amongst all classes.

The first meeting of the Cereal Conference was held on the 9th of August when various useful suggestions were put forward. The members realised, however, that little could be done beyond propaganda and example, without legislation. It was unanimously agreed that much assistance would be afforded by the increase of duty on imported flour.

The crops that should have mention at this time of the year are as follows :—

CAROBS.

The yield is approximately 50 per cent. more than that of last season, but the price is the lowest realised for many years, viz., 6s. per cantar. Rumour is rife that the price may fall still lower.

TOBACCO.

Interest in this commodity is spreading and, as mentioned in my last report, the yield is estimated to be both in regard to Latakia and yellow leaf, considerably in excess of that of last year. There is a marked improvement in quality owing to the fact that villagers are acting upon advice given to them. Fumigation of Latakia is being carried out more extensively, and a

few producers have obtained some knowledge in regard to "Basma" and "Bashibagli" packing of the yellow leaf. I understand that Cyprus tobacco intended for cigarettes is gaining favour and the producers are anxiously awaiting the return of the principal buyer from England next month.

LEMONS.

There is a considerable increase in the yield of this fruit, but with the absence of Kia-Ora Ltd., and other buyers, it is doubtful whether growers will have the same opportunities of disposing of their lemons as during the last two years. There is, however, a rumour that this product is being sought after by somebody who proposes to export it to Salonica. I understand that the price to be paid is 1s. per 100 which should be very satisfactory and remunerative to the producer.

GRAPES.

It is to be regretted that the few vineyards which this district possesses have been badly attacked by mildew. This is most unfortunate as every endeavour is being made to revive an old industry. In some cases the loss has been serious: I quote my own as an example when I lost more than 100 oke from one small vine.

With the exception of broad beans and the products already mentioned, the yield of all crops is in excess of last year. The price in every case is considerably less than that obtained in 1929.

NURSERY GARDEN.

The Nursery Garden at Kyrenia continues to flourish under the care of Mr. Kyprianides, the District Agricultural Supervisor. A much needed office and store are being constructed to replace the very inadequate accommodation which fortunately was damaged beyond repair by the floods of last year.

By the re-opening of the schools it is hoped that there will be renewed activity in the improvement of school gardens.

The Demonstration and Experiment Garden at Lapithos continues to improve and generally speaking the lime saplings are in a healthy condition. There has, however, been some difficulty experienced in regard to its irrigation owing to the unwillingness of the lessor to fulfil his contract in this respect.

RAT DESTRUCTION.

This work is progressing favourably and resulting in the gradual extermination of the pest. One Rat Destruction Officer was transferred owing to neglect of duty and was replaced by a more capable and satisfactory worker. Villagers are now only too anxious to obtain the services of the Rat Destruction Officers and complaints regarding the destruction of their domestic animals are no longer received.

LARNACA DISTRICT.

By the Acting Commissioner of Larnaca.

Abstracts from the Agricultural Section of the Acting Commissioner's Report for the Quarter ended 30th June, 1930.

CEREALS.

THE harvest of cereals this year in Larnaca District was not satisfactory. The wheat and barley production is estimated to be nearly half that of the last year. There was a demand of 32,000 kilés of wheat which have been exported to Turkey and Greece.

CAROBS AND OLIVES.

The carob crop was satisfactory, but there is very little olive produce.

COTTON.

Cotton production may be considered satisfactory.

GRAPES.

The yield was excellent this year, but the recent rains have caused damage.

NURSERY GARDEN AT LARNACA.

New roads and paths were opened and the old ones were repaired. All hedges were pruned and dead trees were cut down. With a view to making the garden more interesting to visitors, labels bearing the name of each tree were put up in the garden. Half of the plots of the garden were manured and cultivated and are now ready for winter planting. Plants in pots and beds were regularly irrigated and cultivated. A good amount of seeds were collected and saved for distribution. About 1,000 pots were planted with carob seeds. The garden was kept clean and tidy.

MOSLEM SCHOOL NURSERY GARDEN.

The garden by regular watering and cultivation was kept in good condition, all plants showing a healthy growth. Government stud animals for more than two months were supplied with fodder grown in this garden. A considerable amount of seed of the following plants was collected and saved for distribution :—

Onions, maize, broom corn, Sudan grass and vegetables.

The permanent hedges and trees are progressing very well, and there is every indication of a fine fruit grove and tree plantation being established in a few years' time.

NURSERY GARDEN AT SKARINOU.

All plants and seedlings planted seem to do very well. More than 50,000 citrus seedlings are expected to be available for distribution.

FIG PLANTATION AND NURSERY GARDEN AT LIVADHIA.

Two borings were made with success, and part of the field has already been cultivated. It is expected to have the land fenced, cultivated and planted very soon.

SISAL PLANTATION.

This plantation which was made to show the possibilities of the development of sisal industry is in a very good condition, plants are showing a good growth.

SCHOOL GARDENS.

Regular visits by the Agricultural Supervisor were made to these establishments and instructions were given to school-masters and pupils.

PLANT DISEASES.

Instructions were given by the Agricultural Supervisor regarding methods of control of various plant diseases. All potatoes exported and those offered for sale at the market place were inspected and examined by the officers of the Agricultural Department, and those found to be attacked by *Lita solanella* were destroyed.

DRYING AND PACKING OF FIGS.

Officers of the Agricultural Department have also given instructions in the drying and packing of figs at Livadhia, Pano and Kato Lefkara and Kato Drys.

DRYING OF RAISINS WITH CARBONATE OF POTASH.

With a view to improving the quality of raisins demonstrations with carbonate of potash solution were made in all the raisin-producing villages of this district. 57 okes of carbonate of potash was distributed by the Department of Agriculture free of charge to 30 different persons in 12 villages.

STUD STABLES.

The stud stables in Larnaca were kept in a clean and good condition during the quarter. The figures of services in the stud stables during the quarter are as follows :—

Stallion	5
Donkey	10
Bull	12
Boar	10

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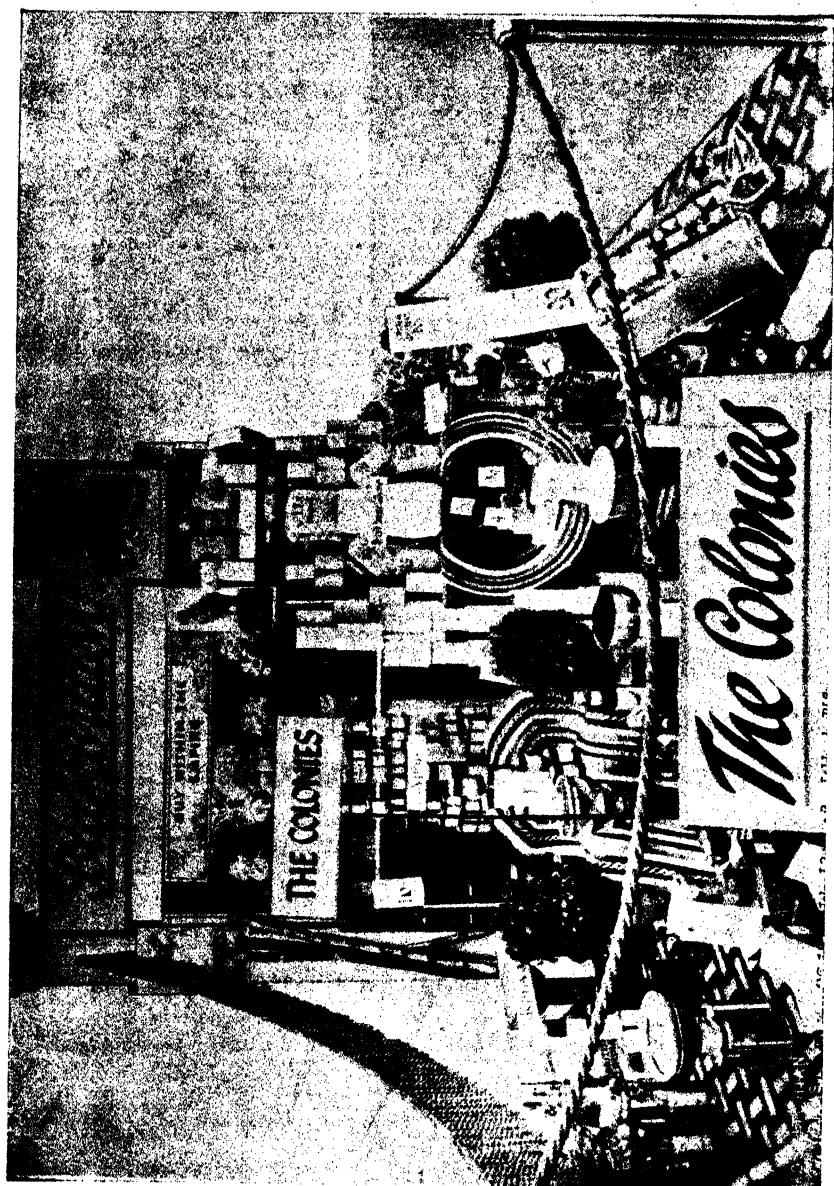
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Cyprus Exhibits at the Civil Service Supply Association.

The Cyprus Agricultural Journal.

A QUARTERLY REVIEW
OF THE
AGRICULTURE, FORESTRY AND TRADE OF CYPRUS.

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MARCH, 1931.

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EDITORIAL NOTES.

It is hereby notified that, commencing with Part 1, Volume XXVI., 1931, the CYPRUS AGRICULTURAL JOURNAL will in future be issued quarterly in March, June, September and December.

* * * * *

From the farmers' point of view the weather has so far been very favourable, especially for cereals, and it is confidently hoped, if weather conditions generally continue favourable, that the production of grain will be very good this year.

* * * * *

The mild weather so far experienced has been favourable to the growth of pasture, so that there is ample grazing for sheep and goats and the production of cheese is expected to be well up to the average.

* * * * *

Despite the favourable growth of pasture above referred to, the long dry spell which followed the first autumn rains has been responsible for very heavy parasitic invasion of sheep and goats. Both stomach-worm and fluke infestations were particularly numerous and the losses have been very heavy except in areas where good hand-feeding and medicinal treatment were carried out.

* * * * *

The members of the veterinary staff have been demonstrating in many villages the advantage of periodical dosing of all sheep and goats with copper sulphate solution for the destruction of stomach worms, and in many areas the shepherds are now continuing the treatment with drugs which are supplied free of charge. In some areas where fluke infection is heavy, demonstrational treatment has also been carried out with considerable success.

Outbreaks of variola of goats in Pyrga, Peristeronapiyi and Lefkoniko were brought to notice towards the close of 1930. This disease has not been reported since 1923 and it was hoped that it had been eradicated. Prompt action has been taken to prevent the spread of the disease.

* * * * *

Fowl cholera has been very prevalent in Larnaca district and elsewhere during the last three months. The practice of throwing dead fowls in the streets and outside the villages (instead of burying or burning them) has been responsible for the spread of the disease. A satisfactory serum for protecting fowls against this disease is now being produced at the veterinary laboratory.

* * * * *

Investigations are being made by the Department of Agriculture as to the qualities of the different kinds of flour produced by the various types of wheat grown in the Island, in co-operation with the Imperial Institute and manufacturers of milling machinery. Milling questions are being investigated and the baking capacity of each type of flour is being tested for comparison with the baking qualities of imported flours.

* * * * *

At the Kykko experimental and acclimatisation fields the following introduced varieties of cereals have been under trial. Most of them have been under experiment for the third season and certain varieties appear promising and it is hoped will afford conclusive results this year:—

Wheat	..	..	..	..	116 varieties.
Barley	..	..	..	..	13 "
Oats	..	..	..	..	12 "
Rye	..	..	..	..	1 variety

In addition to these variety tests, eight plots have been sown with barley in connection with soil investigations and four plots to test the value and effect of certain chemical fertilizers.

Tests are also being carried out with twenty-five varieties of pasture and fodder plants, annual and perennial.

* * * * *

The Pissouri field for "Sirividhi" control experiments, which lay fallow last year, has been planted up this year in 4-donum blocks with different trial crops.

* * * * *

The cultivation of haricots was formerly practically confined to the Pitsilia and Marathasa districts, but in recent years, and since the introduction by the Department of Agriculture of new varieties, their cultivation has extended all over the Island including the plains. As the export demand and price of potatoes have declined, growers have turned their attention to other crops amongst which the haricot bean is a favourite. The

cultivation of this bean might be taken up more generally, seeing that there is a good demand for local consumption, as we continue to import this bean to the annual value of some £10,000. With extended cultivation we could not only meet local requirements but also export this commodity. A recent enquiry was received from the Trade Commissioner in London as to whether special varieties, marketable in England, could be grown in Cyprus and samples of these varieties have been obtained and will be placed to a practical test in the spring.

* * * *

The cultivation of the grapefruit, several varieties of which were imported from South Africa four years ago, is very promising. All the imported varieties fruited well this year which afforded proof that the climate of Cyprus is quite suitable for its cultivation and commercial production. Colonel Grove White, C.M.G., who has settled at Kyrenia, has established a small grapefruit plantation and there are others contemplating planting this crop on a commercial scale.

* * * *

The trials carried out last year with "Mesowhite" cotton, seed of which was imported by the Department of Agriculture from Mesopotamia, have given excellent results. Lint which has been sent to England by Mr. D. N. Dimitriou, O.B.E., M.E.C., ginned from cotton grown on his farm at Potamia, was found to be of good quality and worth 150 points over American Middling, whilst our local variety "Titsiros" was only valued, at the same time, at 50 points above American Middling. The Department of Agriculture has secured a large quantity of seed of this variety for issue, on repayment, to cotton growers, to whom its cultivation is strongly recommended. It may be mentioned that "Mesowhite" has produced threefold more than the common local variety.

* * * *

The flax scutching mill at Zodia is being operated by the Agricultural Department in connection with the Empire Marketing Board scheme for developing the flax industry. Twenty-four thousand okes of straw have been purchased from small farmers in the Zodia region, and a smaller quantity of straw has been brought from the Messaoria. This had previously been broken and baled so as to reduce transport charges to a minimum. As soon as completed, a consignment will be sent to Belfast or Dundee to be sold at the best price obtainable. The scutching mill at Mandria has been hired for a month, to give the Paphos flax and hemp growers the same facilities as are enjoyed by the Morphou and Messaoria farmers. One of the flax staff, who recently concluded his training at Belfast, has been stationed at Paphos to supervise the work of scutching and to give advice on flax growing to persons interested.

In conjunction with the Zodia mill, a small spinning and weaving school has been started at Zodia; the use of the best modern hand implements is demonstrated, new designs and articles for local use are being made on an imported loom. A bleaching green, which should render the introduction of chemical bleaching agents superfluous, is also being established for general use.

Field work is concentrated at Acheritou, where a number of varieties, which had been tested on a small scale previously, are now being cultivated on a commercial basis. New varieties, and more particularly crosses between Cyprus, Irish and Belgian are being tested, under close supervision, at the Kykko acclimatisation field.

* * * * *

The Comptroller of Customs reports that the year ended much as it had begun, badly, both imports and exports being below those for the corresponding month of 1929, £18,352 in the case of the former and £38,429 in the case of the latter. The year ended up as follows as compared with 1929:—

		Imports.			Exports.
		£			£
1929	..	1,983,833	..		1,635,742
1930	..	1,419,990	..		1,217,727
Decreases		£563,843	..		£418,015

It is hoped that 1931 will see a great improvement in trade and that we shall be able to report more favourably on the position a year hence.

Hornets.

THE hornet is probably one of the best known insects and the damage it causes to various kinds of fruit, especially grapes, and to bees, is widely recognized.

The hornets belong to a group of insects, known as social, because they form communities consisting of several hundred or even thousand individuals, in the case of a strong nest, by the end of the summer when they are most numerous.

Until males and females are produced on the approach of autumn, the population of a nest consists of a queen, which founded it, and workers which are sexually imperfect or undeveloped females.

The habits of the hornet are somewhat similar to those of the honey bee during the period of year in which they are active, they differ, however, in the kind of food required and also in the fact that a hive of bees is always a large community, with a

queen that may live for some years, while only the queen hornet survives the winter and she only lives for one year. The old queen hornet which founded the nest dies in the autumn, together with all the workers and males. No honey or other food is stored as there is no community during the winter for which it would be required, and no wax is secreted, the nest being made of paper-like material prepared by the hornets.

At the beginning of the warm weather the females or queens come out of the places where they have hibernated and search the surrounding areas for a suitable place for constructing a nest.

The sites chosen for nests vary considerably, and they may be built in bare ground, a start probably being made in a hole previously made by some other insect or animal, or in a hole in a wall of stone or brick, behind loose plaster, in a hole in a bank or amongst loosely piled rocks.

The queen is frequently some time in finally deciding where to commence her nest, but having chosen a site she there constructs a small group of cells in which she lays eggs, subsequently feeding and attending the larvae and pupae until they reach the adult form, when they join the queen in building more cells, enlarging the hole when possible and feeding and attending larvae. These adults and all others until the end of summer are workers, and the queen soon ceases to leave the nest, devoting herself entirely to egg laying, being fed by the workers.

Thus it will be seen that the hornets seen flying in numbers during the summer are all workers.

Late in the summer and in the autumn males and females (young queens) appear.

After pairing, these young queens search for a place in which to hibernate, choosing holes in walls or roofs or any convenient sheltered place, a number of queens often hibernating together in the old nest. In these places they remain throughout the winter until aroused in the spring by increasing temperature.

From the foregoing brief account of their habits it can be seen that there are two ways in which hornets can be effectively destroyed, (a) by destroying the queens either while they are hibernating, or in the spring when they are seeking a site for their nest or collecting food for the first few larvae; or (b) by destroying the nests as soon as they can be seen and before the autumn when the young queens are produced.

In order to encourage the destruction of the queens during the winter and spring, the Agricultural Department has, for some years past, purchased queens brought in in the spring, usually

until the 31st of May, at a rate which has varied in different years from 5 paras to 2 paras each, and large numbers of queens have been collected and destroyed each year. Any hornets seen before the 31st of May are almost certainly queens and should be destroyed as each queen destroyed then means a nest less in the summer.

The finding of queens when they have hidden themselves away for hibernation is not easy and many of them escape detection and establish nests in the following spring.

The second method of destroying hornets, by the destruction of their nests during the summer, is capable of much wider use than has hitherto usually been made of it. A hornet's nest is always fairly conspicuous owing to the constant stream of hornets flying to or from it throughout the day, and not very serious difficulty should be found in discovering the nests from which the hornets are coming to cause damage in any particular place. When the nest has been found it should be marked so that it can be found again after dark, and then after dark, when all the hornets have returned for the night and the nest is quiet, the hole may be destroyed by putting into the opening a few pieces of burning sulphur and blocking the entrance with mud or plaster. In some cases nests may be destroyed by pouring in a small quantity of petroleum and setting it on fire, or even if the hole is merely blocked with mud or plaster, if well done it may be effective.

The most effective method of destroying a nest is by pouring into it after dark a small quantity of a solution of sodium or potassium cyanide, but this material is not usually available and is exceedingly poisonous, so that one of the other methods given may have to be used.

Various types of traps are very effective in catching large numbers of hornets during the summer, but from the account which has been given above of the life of the hornets, it will be seen that it is necessary to catch some hundreds or even thousands of these hornets, which at that time are all workers, to effect what could be done much more quickly and completely by the destruction of a single nest.

It is proposed next spring and summer to equip some of the officers of the Agricultural Department with a poisonous dust for destroying any hornets' nests which they may observe or which may be pointed out to them, but as is obvious from the foregoing account, the hornet pest can be most successfully dealt with by the people living in the area affected, who must be aware of or can easily find the nests.

Imperial Entomological Conference.

THE third Imperial Entomological Conference was held in London from June 17th to June 27th, 1930, and was attended by 35 delegates from Great Britain and 23 Dominions and Colonies, and two experts loaned by the Government of the Sudan.

In most cases the delegates were one or more of the Government Entomologists of the dominion or colony, Cyprus being represented, for the first time at these conferences, by the Government Entomologist, who was in England at the time.

Business meetings were held at which reports were received on the work of the Imperial Bureau of Entomology, now renamed Imperial Institute of Entomology, and a number of resolutions were passed for submission to the Governments concerned.

Visits were arranged for the delegates to the Imperial Institute of Entomology's Parasite Laboratory at Farnham Royal; to Cambridge; and to Rothamsted Experimental Station and the Ministry of Agriculture's Pathological Laboratory at Harpenden.

At the Farnham Royal Laboratory the work of rearing parasites of injurious insects, for shipping to colonies where the parasites are not yet found, was seen in progress and the various methods in use were demonstrated. Insects which attack certain weeds which cause great difficulties in some colonies are also being studied and shipped to the colonies, where it is hoped they will materially assist in bringing the weeds under control, as has already notably happened in the case of the prickly pear in Australia.

The most interesting feature of the visit to Cambridge was the visit to some of the orchards of Messrs. Chivers where up-to-date spraying methods are employed and the trees are consequently kept in excellent condition.

At Harpenden the experimental fields of the Rothamsted Experimental Station were visited and the various lines of entomological work in progress in the laboratories of the Experimental Station and of the Ministry of Agriculture were demonstrated.

The remainder of the time of the Conference was occupied with discussions on entomological subjects of interest to most of the dominions and colonies represented.

Amongst the subjects discussed was "The Organization of Entomological Departments" which was considered mainly in the relation of Entomologists to Agricultural, Veterinary and Medical Departments. In the larger colonies and dominions there may be entomologists attached to all these departments

whereas in such cases more efficient service would probably be obtained if all entomologists were grouped together in an Entomological Department.

In a discussion on "Entomological Work among Backward Races" emphasis was laid on the importance of encouraging the use of resistant varieties of crop plants where they are available, and cultural methods generally. In few of the colonies, apparently, are the native cultivators sufficiently advanced to be trusted with or encouraged to use poisons, although this has been done successfully in some of the colonies. The value of the education of the native cultivators was agreed upon, and also the importance of making full use of the tribal systems and village headmen. It was also agreed that popularly written leaflets were of great value.

It was agreed, in a discussion on "Cultural Control Methods" that in many cases such methods are the most useful and sometimes give the only effective or economic method of controlling a pest.

The discussion of "Locusts" was almost entirely confined to *Schistocerca gregaria* which chiefly affects Palestine, Arabia, Egypt, the Sudan and the East African colonies, but which visited Cyprus in 1915, causing severe damage. It appears that the most valuable control work could be done if the at present unknown permanent breeding grounds, from which the swarming first starts, could be discovered.

It would then be possible to apply control measures in the permanent breeding grounds as soon as the population there reached dangerous numbers and before swarming started, and so prevent swarming at a much smaller cost than is involved in dealing with an outbreak in full swing.

The discussions on "The Biological Control of Insects" and "The Control of Weeds by Insects" were of great interest, but the latter subject does not particularly concern Cyprus, as it is a method only applicable in special cases and particularly where the weed is an introduced plant. A most interesting film of the technique of parasite rearing, as carried out on a large scale in Canada, was shown.

In numerous informal discussions between Entomologists from the various dominions and colonies much interesting and useful information was received and given, and probably the most useful function of these conferences is this bringing together of workers on similar problems under different conditions, enabling free interchange of ideas and information to take place.

It was recommended that a Fourth Entomological Conference should be held in London in the summer of 1935.

Report on Agriculture in the Kyrenia District for the year 1930.

By O. G. DENNIS, *Commissioner of Kyrenia.*

THIS year has been anxious and disappointing to the farmer, for although there has been a good yield of most crops, the lack of demand and the prices offered have caused great concern. Without exception, the prices for all commodities are some of the lowest on record, and a very definite air of pessimism prevails. Farmers are in consequence, not in a position to employ labour as in the past, with the result that many lands will lie fallow this coming season. In this connection, I have, with a certain amount of difficulty, obtained the names of some 1,500 unemployed people in the district. These persons are for the most part casual labourers, and their names have been recorded under their respective villages in a register. This measure should, to some extent, be of assistance to the unemployed and to the employer of labour in any particular locality.

2. Great hopes are entertained for the improvement of trade by the opening up of new markets, etc., as the result of the Trade Mission's work.

3. There has been an abundance of rain this year, and although at one time it was feared that the crops would be affected, no damage was done. Heavy showers fell in September, but there was no more rain of any account until the beginning of November, thus enabling early ploughing and sowing to be carried out.

4. *Nursery Gardens.*—The Nursery Garden at Kyrenia continues to flourish. A new office and store have been built to replace the very unsuitable hut which was destroyed by the floods last year.

The Demonstration and Experimental Garden at Lapithos is progressing favourably, and with careful attention should prove to be a great asset to the district.

Only one new School Garden has been established ; several were proposed but, owing sometimes to difficulties in obtaining a site, water or funds, they have not been made. It is encouraging to note that both schoolteachers and villagers are keen to establish gardens, and it is hoped that more will come into being during the new year. Mention should be made of Karavas, Vasilía and Myrtou, where prizes were awarded for the best gardens in the district. This is especially creditable to Vasilía and its Mukhtar who took great interest in this garden which is even now little more than a year old.

5. Special mention should be made of the following crops:—

(a) *Wheat, Barley and Oats*.—On the whole the yield of these crops was in excess of last year. Signs of “rust” appeared in parts of the district, and although in some quarters it was alleged that crops were totally destroyed, this was proved to be a gross exaggeration. Farmers, however, have had great difficulty in disposing of their cereals and those fortunate enough to do so, have been able only to sell at a price which is the lowest on record for many years. The first meeting of the Cereal Committee was held on the 9th of August last when various useful suggestions were put forward. The members realized, however, that little could be done beyond propaganda and example, without legislation. It was unanimously agreed that much assistance would be afforded by the increase of duty on imported flour.

(b) *Olives*.—This crop failed completely, and the small amount of fruit that was to be seen at one time in the year was destroyed by *Dacus oleae*. This failure was attributed to the mild winter of 1929–1930, but in view of the abnormal yield of last year, this has been the natural order of things.

(c) *Carobs*.—In spite of the fact that trees treated for *Brachycarpia* were alleged to have been ruined, the yield of this crop was nearly double of that of last year. Unfortunately, however, the price is so low, viz., 4s. to 6s. per cantar, that the farmer has suffered another set-back by being unable to market his main crop at a remunerative price. The cost of transport is on an average 1s. per cantar, and when wages for gathering and the time taken for conveying the beans to the stores are taken into consideration, little or no profit remains.

(d) *Citrus Fruits*.—With the exception of mandarines, there is a considerable increase in the yield of citrus fruits, particularly in regard to lemons. Growers are, however, finding great difficulty in disposing of their produce, but it is hoped that eventually the bulk of the crop will be sold to the Famagusta Citrus Company, and the remainder exported. Fallen fruit which has not been damaged is being preserved in washed sand. This is in the nature of an experiment, which, if successful, will result in the fruit being marketed at a time when prices are higher.

It is encouraging to note that many farmers of Karavas have formed themselves into an Association known as the “Karavas Growers Association.” This year, its activities have been confined to the sale of lemons and the making of concentrated lemon juice. The Committee have written to several firms abroad and are in touch with the Citrus Company above mentioned. With regard to the manufacture of lemonade, or rather concentrated lemon juice for lemonade, I understand that certain members of the association were last year given an order

for 5,000 bottles, which unfortunately due to lack of interest was unfulfilled. This year, however, those genuinely interested are desirous of obtaining a similar order. I have made inquiries, therefore, and hope before long an order will be placed. Ignorance of packing was the usual difficulty, but I suggested the same methods should be employed as those used by Messrs. Dewars for their black and white whisky. I sent a case of twelve empty bottles to show their arrangement together with general instructions regarding the making of similar boxes and the packing of same. The usual apathy was not lacking in that the receipt of the sample box was not acknowledged until the addressees were prompted to do so! I am sufficiently optimistic to hope that the association will extend its activities to other products.

(e) *Tobacco*.—As mentioned in previous reports, there are indications of improvement in the quality of the leaf, and although planters are slow to learn and very conservative, there are signs that instructions as to the best methods of production are being more strictly adhered to than in the past. Following on the conditioning and fermentation of the 1929 production during the summer months, the disposal of almost the entire crop is nearing completion. Approximately 53,000 oke were produced, the greater portion being that of the Latakia type. The remaining stocks represented only a negligible amount of poor quality tobaccos of unmarketable value. The estimated quantity for 1930 is about 48,000 okes, most of which has already found a market. The yellow leaf for cigarettes is in course of being manipulated into bales. The quality of most of this crop shows an improvement as compared with that of last year. This is due principally to greater attention and care shown in planting and to better weather conditions. Many planters, however, instead of confining themselves to "dry" growing still insist in irrigating their tobaccos during the growing period, which tends to produce a weak-bodied leaf of poor substance.

(f) *Cocoons*.—A good deal was said with regard to silkworm "seed" and the production and price of cocoons. Despite the fact that producers could obtain only about half the amount of "seed" generally used, it is interesting and satisfactory to record that the production of cocoons amounted to nearly the same as last year. Whether this is the result of continually urging producers to pay greater attention to ventilation and less overcrowding, or merely to force of circumstances, I do not know; but the fact remains that a large amount of seed will not necessarily result in a big production of cocoons unless great care is exercised. The price of this commodity varied between 14cp. and 16cp. per oke, which is considerably less than that obtained in 1929, when 24cp. and 26cp. was paid for the same weight. Certain merchants were approached

recently with a view to inducing them to sell the remainder of their cocoons on hand to the Filature at Paphos. It is to be regretted, however, that the suggestion was rejected as they preferred to retain their stocks until the price in France improved.

(g) *Vines*.—No experimental vineyards were planted during the year under review, but many applications have been received which will be dealt with in 1931. There are indications in some parts of the district that this old industry is being revived, but in some places there is the usual opposition against anything that entails extra work. It is unfortunate that the few vineyards which this district possesses were this year badly attacked by blight as every endeavour is being made to encourage viticulture here.

6. *Rat Destruction*.—Good work has been carried out in the destruction of this pest, despite the very studied opposition on all sides at the beginning of the campaign. Most villagers are now realizing the wisdom of co-operating with those in charge of the work, and the necessity of exterminating a pest that has caused so much damage to some of the most important crops which this district and Cyprus possesses. There are still a number of villagers who hanker after using the old methods, and I have told them on many occasions that there is nothing to prevent them doing so. The rat tails will not be bought, however, so there will be no inducement to breed this rodent as a source of income !

Motor Lorry Transport for Timber and Fuel.

BY B. J. REILLY AND G. W. CHAPMAN,

Assistant Conservators of Forests.

THROUGHOUT the forests of Europe the motor lorry is playing an increasingly important rôle in all kinds of extraction work. Forest road systems are being extended and regarded to facilitate motor traffic, transport by animals being used only to bring logs from the stumps to the road, or for transport in places otherwise inaccessible to lorries. In view of this, it becomes necessary to examine the possibility of developing motor lorry transport in Cyprus, where a constant demand for timber and fuel requires that the Forest Department should aim at the highest degree of efficiency in its methods of satisfying this demand.

The present fleet of three lorries has clearly indicated that this form of transport has many obvious advantages. In the first instance, lorries work at a far greater speed, and can carry more than any other type of trackless vehicle. Departmental

lorries, further, would secure independence from hired cart or lorry drivers, avoiding in this way local fluctuations in transport rates, and the "forced" prices established by rings of contractors. In both directions, firstly by increased work done, and secondly by independence from local contractors departmental costs can be considerably reduced.

In a country where the danger of forest fire is always present, the speed with which men and fire-fighting apparatus can be moved is of primary importance. In this respect the motor lorry is superior to other forms of transport, and in fact, is becoming almost indispensable.

The conditions existing in Cyprus present many obstacles, which are gradually being overcome, but before a system of extraction by departmental lorries in conjunction with other appliances can be developed to its fullest extent, many of these problems will have to be solved. The number of motor roads, for instance, is inadequate, and extensions in the heart of the forest are needed; many of the existing roads are too narrow, and have badly built bridges. Forest roads, in addition, need to be metalled to take the more exacting motor traffic: In the hill districts especially, where the roads are less stable and the radius of bends small, it is impossible to use lorries of more than 30 cwt. load capacity.

The development of lorry transport must keep pace with the output of timber and fuel from the forests, so that a regular supply is maintained, and the lorries kept fully employed. Definite areas should be tapped each year for the available timber and fuel, and the produce stacked on the extraction roads ready for removal to the market or the timber stores. Until such time as these two main obstacles: inadequate systems of extraction roads, and scattered fellings over wide areas, are overcome, transport by means of the motor lorry must have a limited application. Nevertheless, the present fleet could with advantage be increased.

Apart from these two, there are other points which, though hardly amounting to disadvantages, must yet be borne in mind when considering the question of lorry transport. A larger fleet of departmental lorries calls for the establishment of a central repair shop and staff as well as convenient petrol depôts; reliable drivers are essential, for a careless driver tends to increase breakages and the general wear and tear on the lorry; good drivers ask for higher wages; return journeys empty are more costly where motor vehicles are concerned, though such unavoidable losses can be reduced by employing more lorries and lessening the operating range of each. These difficulties could be easily surmounted with proper organization.

Let us now contrast the cost of lorries with other common means of transport (excluding railway and sea):—

Type	Speed in miles per hour	Capacity of load	Average over-all cost per mile
Motor lorry	12-20	30 cwt.	s. <i>cp.</i> 0 4½
Double mule cart..	4	1 ton	0 3½
Single mule cart ..	3- 4	300-400 okes	0 1½
Pack donkeys . .	4	80 okes	0 0½

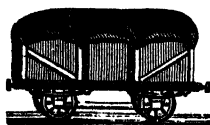
This data clearly shows that in proportion to the cost, a lorry can do about three times as much work as the other forms of transport.

There are only three lorries of 30 cwt. burden belonging to the Forest Department, and these cannot even cope with present needs. Lorry transport is urgently required in the following districts :—

- (1) Paphos forest and district ;
- (2) Troödos forest ;
- (3) Adelphi forest ;
- (4) Nicosia and district ;
- (5) Larnaca-Limassol districts.

A reserve lorry should also be maintained to relieve any district lorry in the event of excessive work or of break-downs. When the existing roads are improved and extended, and the supplies of timber and fuel are made available, the fleet of lorries will need to be increased.

Finally, if development follows the above lines, a system will be established, whereby constant and regular supplies of forest produce are conveyed from the cutting areas to timber stores and dépôts on the outskirts of the forests. Here they would be concentrated to meet local demands, or transported to other dépôts situated so as to supply markets having no adjacent forest sources.



Cyprus Timber v. Imported Timber.

By B. J. REILLY, *Acting Principal Forest Officer.*

THE difficulties that have to be overcome in Cyprus, in extracting timber from the forests and distributing it to the centres that can supply the demand, are the cause of the relatively high sale prices compared with the prices charged for the imported product, and, as there is some difference of opinion on the advisability of charging an import duty of 25 per cent. ad valorem, when in the interests of the island it would seem to be better to encourage the use of imported timber, and so relieve the pressure on the forests, a discussion of the economic factors affecting the market should be of interest.

The imported timber, which sells at a competitive rate though a duty of 25 per cent. ad valorem has to be paid, is admittedly of much better quality than that produced in Cyprus, for it is grown under better, if not ideal, conditions in Roumania, Turkey, Sweden and Yugoslavia, in forests that are not in urgent need of conservation and are capable of producing high yields. The bulk of it is water-borne, the cheapest and best form of transport, which disposes of many of the difficulties of logging.

The local timber is not grown under the same conditions, for the effects of fire and grazing, the denudation caused by clearance, and the dryness of the climate, have all combined to reduce the forests to a condition that does not allow of heavy and systematic felling, but calls urgently for protection; the extraction of timber is thus subordinate to the conservation of the forests and the indirect improving of rainfall and climate. From infancy the boles or stems have been too far apart to have caused that struggle for light and predominance that results in tall, straight and clean timber.

The precipitous slopes in both ranges of mountains make it necessary to apply the "selection system" of silviculture, by which a constant forest is maintained, the fertility of the soil is ensured and production against erosion is afforded. This may be described as a system of keeping the age-classes, namely, trees grouped within definite age-limits for purposes of management, distributed over a forest in the correct proportion of stems, and of cutting the oldest trees as they mature.

As the oldest trees occur scattered throughout the area, the cutting of them cannot be concentrated and the difficulty of transporting heavy logs, over considerable distances, to the nearest saw mill has to be faced. It must be obvious that a good system of extraction roads is indispensable, and that until such a system is provided the cost of marketing the timber is bound to be high.

The term "normal density" in forestry is applied to that condition in which a canopy is formed by the interlacing branches

without an excess of stems. Under the conditions prevailing at present the mature trees in the Troödos, Paphos and Adelphi forests are not of normal density, the groups of younger trees are not proportionately represented, and, though the young growth promises to become normal forest in the future, it does not occur profusely enough to allow a regular and distributed felling. But as there are trees that have to be felled, such as overmature, diseased or burnt trees, isolated trees standing over promising young growth, and badly shaped or otherwise defective trees standing over more promising ones, it is important that the price of timber should be maintained at a level that will make their removal remunerative. For this reason the import duty should not be reduced.

On the other hand it should not be raised, because a rise in prices would be followed by an increase in the cost of building, and because the yield of local timber cannot maintain an alternative supply. The conditions will change gradually as the forests recover and become capable of yielding regular supplies. Better facilities are being provided each year for the extraction of timber, and though some years must elapse before a good system of extraction roads can be laid down, the cost of putting local timber on the market will be reduced by improving the equipment for handling logs and employing more efficient methods. Until then the present import duty should be maintained, not only for the reasons stated, but also because an increase of imports would have an adverse effect on the economic position of the island and the labour market.

The Codling Moth (*Carpocapsa*) in New South Wales.

IN New South Wales, where (as in most parts of the world where apples are extensively grown) the Codling Moth (*Carpocapsa*) is a serious pest, the growers are required by a recently revised regulation to carry out the following measures: Spray all apple, pear and quince trees four times a year, the first spraying to commence when most of the petals have fallen; keep the trees free from loose bark and broken limbs, and all crevices and cavities in the trees free from larvae and pupae of the insect, all larvae and pupae found and all bark removed to be burned; collect and remove from the orchard all fallen apples, pears and quinces at intervals of not more than seven days; destroy all infected fruits by boiling, burning or burying.

Bandaging of trees is not now enforced in New South Wales but it is strongly recommended to growers, who are also advised to fill cracks in the trees and remove loose bark so that the full value of bandaging may be obtained. In some carefully carried out experiments it was found that 62 per cent. of the *Carpocapsa* larvae could be collected and destroyed in bandages.

Beekeeping in Cyprus.

AN interesting note on beekeeping in Cyprus by Mr. J. E. M. Mellor, M.A., F.E.S., formerly Senior Entomologist in the Ministry of Agriculture, Egypt, is published in the *Bulletin de la Société Royale Entomologique d'Égypte*, 1930, Fascicules 2-3.

Mr. Mellor came to Cyprus for a short time in the summer of 1929 and visited the principal honey-producing areas of the island. He states that although honey bees are kept here and there all over the island, the chief centres are Korno and Kyrenia, and the Monastery of Stavrovouni near Korno has made a name for the excellence of its honey.

The chief sources of nectar in the island are the flowers of the wild thyme, eucalyptus, orange and carob. Wild thyme predominates over the whole eastern portion of the island and the mountain ranges and its honey flow lasts about a month from the middle of June to the middle of July; its sweet smell is perceptible at a distance of several feet from the hives.

Honey from carobs is very poor; that from oranges, which flower in April, only provides food for the bees as the colonies are not then strong enough to produce a surplus.

The native hives and methods of beekeeping, which are very similar to those obtaining in Egypt, are described. The hives are pipes made of baked earthenware stacked in rows one above the other. In the Karpas the pipes are made of sun-dried mud, as in Egypt. The pipes are about 2 feet long and look like an earthenware drain pipe. The ends are closed with the bottom of an earthenware pot or discs of wood or stone held in place with mud, the same material being used for filling the spaces between the hives. Stacks of hives may be roofed with tiles or broken halves of hives.

Entrance to the hives is provided by a hole at the bottom of the closing disc, and an alighting board is sometimes provided by a piece of pottery, wood or stone pushed into the mud below the entrance hole.

The only tools used in the village apiaries are an iron rod about eighteen inches long and a smoker made of an earthenware water pot with the bottom removed and the neck plugged.

Dried cow-dung is burned in the water pot which is held near the rear of the hive so that the smoke blows in to the bees.

At Lapithos Mr. Mellor saw holes through the stone walls of a house used as hives.

Wooden frame hives were seen at the Department of Agriculture, Nicosia, and at Paul Dervishian's apiary in Nicosia, at Kykko Monastery near Nicosia and below Stavrovouni Monastery. All the wooden hives, except those of the Department

of Agriculture and Paul Dervishian, were not being kept by modern but native methods. It is considered useless to adopt the modern hive and retain old methods, and so doing tends to give modern methods a bad name.

All the modern hives seen were painted dark green, which is considered a bad colour and it is suggested that white or pale grey or blue would absorb less heat in summer.

Honey yield from a native pipe hive is stated to be 3 to 4 okes and for a well managed frame hive 10 to 15 okes in Nicosia and probably more in Korno district. Native pipe-hive honey sells in the country at 1s. to 1s. 3cp. per oke ; in town shops at 1s. to 2s. per oke.

"Chunk" honey is prepared in villages, comb honey being placed in a 4-gallon tin which is then filled up with good liquid honey. This is sold at 2s. per oke.

Wax is sold to churches at 4s. or 5s. per oke for candle making. Monasteries keep bees principally for the sake of the wax.

Honey is extracted by placing the combs in deep reed baskets, a circular piece of wood is placed on top and heavy weights or stones are placed upon it. The honey gradually trickles through the basket into a jar or tin below. It is allowed to stand for some days and the dirt, etc., is then skimmed off and the honey poured into 4-gallon petrol tins, the hole in the top being plugged with rag and cemented over with mud.

The chief pests of Cyprus apiaries are the hornet *Vespa orientalis*, L. and the wax moths. There is no bee disease in the island and ants are not troublesome. Cyprus is protected as far as possible from the introduction of bee disease by a Government order under which the importation of bees and honey are only permitted by special licence.

There is a small importation of bees-wax into the island and a small export of honey.

The account is illustrated by five photographs of hives and apiaries.



The Importance of the Egg in Incubation.

BY E. J. DAVEY,

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and Co., Ltd., Sheffield, England.*

Good results in incubation will not be secured unless the egg answers all requirements as to freshness, strength of fertilization, physical texture and condition.

Contrary to what is usually supposed—it is not necessary for the egg to be absolutely fresh in order to obtain good hatching results. But what is essential is that the eggs in any clutch should be as near to the same age as is possible. A certain reasonableness has to be observed. The eggs should be as fresh as possible, but good results can be obtained from eggs up to a fortnight old, providing that they are of approximately the same age, and have been properly stored and turned. Obviously, the fresher the egg the better, but the point is that eggs need not be refused for incubation if the first period of freshness is passed. Provided that they have been properly stored and can be incubated with eggs of similar age, good results will be obtained up to the period stated.

It might be of interest to glance at the underlying reasons for this. It is a mistake to assume that the egg consists of so much dead and inert material. The egg, *i.e.*, the fertilized egg, is actually alive. What really happens is that fertilization takes place when the ripe yolk drops from the ovary of the hen. From that point the life of the new chick starts. During the thirteen hours whilst it is retained in the mother bird's body and while the various layers of white and shell are being added, considerable development takes place in the germ. For instance, it will be settled whether a little pullet or a little cockerel will hatch from the egg, there will have been a considerable amount of cell division, and when the egg is laid, all that happens is that the growth of that little life is suspended. It is resumed again when the egg is brought under conditions comparable with those of the mother bird's body, so that when eggs are put into an incubator, incubation does not start—it is just resumed.

It follows then, that the fresher the egg, the quicker will be the resumption of incubation. If an egg could be placed straight from the mother bird into the incubator, it would hatch in about twenty days. On the other hand, if a week elapsed it would take at least twenty-four hours for the egg to warm up properly, and the full twenty-one days would be required for incubation. This period would be slightly extended as the age of the egg increased. This is the reason why hens who steal their nests so often bring back good hatches. It is not, as is commonly supposed, owing to the action of the humidity of the earth,

it is owing to the fact that each day or couple of days the hen returns to her nest to lay another egg, and in doing that warms all the eggs which are there, keeping the clutch in good hatching condition.

Bad hatches can often be attributed to the fact that this element of freshness has been forgotten. Eggs of varying ages are put into the machine with the result that the fresher eggs hatch first and in hatching, upset the temperature and humidity of the machine, with detrimental effects on those eggs which are still to hatch.

On the question of fertilization it is generally agreed amongst the practical poultrymen, that the influence of the male bird is all important. Weakly fertilized eggs can nearly always be attributed to the male. But the reasons for this are not always clearly understood. Underfeeding of the cock bird is one of the most important reasons for this. It can be taken as certain that the better the bird, the more liable he is to neglect himself in favour of the hens at feeding time. Whilst individual feeding of the male is not always practicable it is desirable to watch this point and to give supplementary feeding to those birds heading breeding pens, which are losing condition.

Equally important is the influence of body parasites on the males. These, by irritation, cause a drop in vitality, which results in poorly fertilized eggs, and on some of the biggest poultry farms in England, it is a routine matter to inspect all the males for body parasites during the breeding season. Every breeding pen should be supplied with a dust bath in order that this particular trouble can be prevented. Where a natural dust bath is not available, a good substitute can be made by mixing nine pounds of fine dry sawdust or fine sand, with one pound of Izal powder.

Other reasons for low fertility will be found in the too fat condition of the birds, red mites, fleas, unsuitable diet and close confinement. But the two causes which have been elaborated probably account for the biggest part of the trouble in this respect.

Strong fertilization is obviously of no use if the contents and texture of the egg are not what they should be. Here again considerable misapprehension exists as to what is really required. In "Nature's" scheme of things, there is no such thing as the edible egg. It is only as a potential chick that the egg has any value. Consequently it is nature's task to see that the egg is stored with sufficient food material to last the chick during development, and until it can fend for itself. All this food material is stored in the egg from the blood stream of the mother hen, and once the egg is laid no further addition can be made to it.

The actual analysis of the egg is, therefore, of very little use to us. From one point of view the percentage of water, etc., is no doubt important and interesting. But from the point of view of incubation we are much more interested in the egg's content from the point of view of the developing germ. What food it requires must be there for it is cut off completely from the mother's body. Broadly speaking, our main interest centres in the fat and mineral content of the egg, and it is these elements which are most often deficient in eggs for incubation, and this shortage arises not so much from unsuitable diet fed to the mother hen before she lays the egg as from faulty metabolism. It is a well-known fact, however, that the hen will draw on her own body supplies almost to a point of exhaustion before any deficiency is noticed in the egg itself.

The question of body condition and food assimilation, however, is not so simple as it looks. If the fat and mineral contents of the egg are primarily important then we need to see that the fat and mineral assimilation of the hen is working at full efficiency. It is not enough to feed the hen with minerals and fat-forming substances. We must ensure correct assimilation. This is particularly true of the most important item of all, viz., lime. In the absence of succulent green food, lime assimilation is nearly always below what it should be, and if healthy vigorous chicks are required, the breeding stock must have all the succulent green food they will eat. In this connection it must be remembered that dry green food is not a good substitute. Green food intended for breeding stock must be succulent, and contain within itself the natural moisture of the vegetable tissue.

The part that the egg plays in the spread of infantile disease, always arouses a good deal of interest and curiosity. But it is to be feared that most of the information published is ill advised.

Broadly speaking, with the one exception of the dreaded B.W.D., it is very questionable whether any disease can be spread through the egg, although there is slight evidence that coccidiosis is sometimes transmitted in this way. With B.W.D., however, the case is very different, and it is generally through infected eggs that this disease comes. Therefore, the only sensible precaution is a thorough blood testing of all the stock birds in stock at proper intervals, and a thorough disinfection of all incubators, brooders, etc., between each hatch, and the destruction of all infected material.

Disease can be much more easily spread to the chick through the organisms on the surface of the shell, and when we remember that the vagina and the end of the bowel both open into the same passage just inside the vent, we shall see how easy it is for the shell of an egg to become contaminated with the organisms of disease.

Therefore, as far as hatching eggs are concerned, where any possibility of disease exists, each egg should be wiped over with a damp cloth, dipped in a solution of one tablespoonful of Izal to a quart of water. This will remove and destroy any disease organisms that may be on the surface of the shell and this combined with a thorough spraying of the incubator between each hatch will remove all possibility of disease from this particular source.

Sericulture in Cyprus.

By S. PONTIKIS, *Sericultural Inspector.*

SERICULTURE is an old-established industry in Cyprus, but, like many other industries, it is at the present time going through a period of depression—by no means the first such period which it has undergone. This period of depression should not lead to undue discouragement, as although the prices at present obtained for cocoons are low, the prices have before descended to almost the same low level but have recovered again and even risen to record heights a few years later.

The world production of silk increases year by year owing to the continually increasing demand for silk products, and it will be seen from the table that the production of cocoons in 1929 exceeded that in 1928 by 109,302,080 kilos, and that in 1927 by 126,532,684 kilos.

WORLD COCOON PRODUCTION.

1927	..	..	..	..	429,135,316 kilos.
1928	..	..	..	..	446,365,920 kilos.
1929	..	..	..	..	555,668,000 kilos.

These are encouraging figures as they show that the demand for silk is increasing and production has increased in most silk-producing countries to meet this increased demand.

Cyprus is a very suitable country for the development of sericulture and, even with the low prices at present ruling, sericulture should be profitable here if suitable care is taken with the rearing so that the largest possible yield is obtained from each ounce of seed and disease is prevented and cocoons of the best quality produced.

Last year I had an opportunity of studying in Italy the methods used by the Italian silkworm rearers.

The Italian rearer, who is often poorer than the Cypriot rearer, takes great care of his rearings. Before the seed hatches, the rooms in which the rearing is to be done are first thoroughly

cleaned and then disinfected. The seed is hatched by means of a small incubator and the worms are fed regularly and frequently with clean and healthy leaves. Care is taken that the worms are not overcrowded and the rooms in which the rearing is done are kept clean and well ventilated and free from excessive dampness. In consequence of their care during the rearing, some Italian rearers obtain 72 to 75 okes of cocoons from 25 grams (1 ounce) of seed, and this yield is obtained by the villagers, not merely by the sericultural stations or experts.

The Cyprus rearers have at their disposal the necessary mulberry leaves but they should pay more attention to the cleaning, disinfection and ventilation of their rearing rooms and should hatch the seed carefully by means of incubators. If proper care is taken, there is no reason why the production of cocoons from an ounce of eggs should not be as much in Cyprus as it is in Italy as climatic conditions here are more favourable than they are in Italy. With such an increased crop the present low prices would not be felt and increased profits would be obtained when the prices improve again.

Great improvements which should be made by all Cyprus silkworm raisers are to feed their worms at more frequent and regular intervals, to be more careful of the condition of the leaves given to the worms and to see that they are evenly distributed so that all the worms are able to feed properly.

In Italy a great deal of attention is paid to the quality as well as to the quantity of cocoons produced. The rearers are obliged to bring their cocoons to special market places where they are examined and graded and the price fixed according to their quality.

Little attention is, unfortunately, paid in Cyprus by either merchants or rearers to the quality of the cocoons. Too frequently the Cyprus rearers take their cocoons to the merchants while the worms are still working inside the cocoons as the cocoons are slightly heavier in this state and they imagine that they can deceive the merchants. This causes loss of confidence between merchants and rearers and also between the merchants and the buyers with whom they deal, while the final quality of the silk is lowered. Cocoons should always be left on the twigs until the worms have entirely finished their important work without being disturbed and the quality of the cocoons and silk is then improved.

The establishment of an up-to-date filature in Cyprus, especially as it is situated in Paphos district, which produces one-third of the whole production of the Island, is a great encouragement for sericulture in the Island because by being reeled

in Cyprus, "Cyprus silk" has an opportunity of regaining its fame in the foreign markets instead—as happens when the cocoons are exported to be reeled elsewhere—of the identity of Cyprus's product being lost and the name unknown in the silk markets. In addition, the filature is able to provide work for about 200 persons throughout the year.

The fall in the price of cocoons is in no way due to any action of the filature but is due to the same causes as the world-wide drop in the price of most commodities, and the price of cocoons has fallen in the same way in all countries. As has been pointed out, Cyprus is at present in an exceptionally favourable position as it should be possible for the Cyprus raisers to increase considerably the yield they obtain per ounce of seed and so compete profitably in the world's markets.

Any action so foolish as the destruction of mulberry trees because the price of cocoons is low cannot be too strongly deprecated.

These trees take some years to come into full production and their destruction during a period of depression would mean that when prices improve some years would have to elapse while new trees were growing before it would be possible to take advantage of the rising prices. Moreover, the trees are usually planted at the edges of gardens and so hardly interfere with the cultivation of the remainder of the ground even if the leaves are not used for feeding silkworms.

After previous periods of depression the price of cocoons has always risen again, even in some cases to record heights, thus although the price of cocoons was only 15*cp.* per oke in 1915, in 1920 the price was 55*cp.* per oke, and it should be the aim of Cyprus producers to be in a favourable position to take advantage of the rise in prices when it occurs.

During the present period of depression it should be the aim of silkworm raisers to improve the yield they obtain, which can be done with the means they have at their disposal by taking greater care with their rearings and following out the suggestions just given, so that, although the price of cocoons is low, they will be able by the increase of their production, to obtain a satisfactory return for their outlay and labour.



Cotton Experiments, 1930.

By A. M. FRANGOPOULOS, B.Sc.,

Assistant to the Government Entomologist.

THE following experiments were carried out by the Agricultural Department at various localities during 1930.

(a) At *Trakhona*.—(i) To find out the best time for sowing the local varieties *Titsiros* and *Local Triumph* with irrigation.

(ii) To try the imported varieties *Mesowhite* and *Sakellarides* with irrigation.

(b) At *Ornithi*.—To find out whether the imported varieties were suitable for the Messaoria soil and climatic conditions.

(c) At *Kouklia*.—To compare the yield of the local variety *Titsiros* with that of *Sakellarides* on a stiff clay soil.

(d) At *Kouklia Reservoir*.—To try *Mesowhite* as a non-irrigated cotton.

CULTIVATION OF THE PLOTS.

The following system of cultivation was followed in the case of all irrigated plots :—

The field was first ploughed two or three times then harrowed and ridged. The ridges in all cases were made 2 feet 6 inches apart and were cleaned and arranged for irrigation and ran east and west.

The seed was sown by hand on the south side of the ridges (to protect the seedlings from the north winds), 12 to 16 dry seeds being put together in holes 16 inches apart.

The *Ornithi* plots and the *Trakhona* plots sown with *Mesowhite* and *Sakellarides* were dressed with one sack per donum of superphosphate before ridging.

The *Kouklia* plot was top dressed with one sack of 4. 12. 3 manure per donum.

Immediately after sowing all plots were irrigated ; six further irrigations were given, the second forty days after sowing.

The thinning was done before the second irrigation, only two plants being left in each hole. All plots were hoed four times, this being done after the 1st, 2nd, 3rd and 4th irrigations.

The cotton was picked direct from the plants in the field and not, as is the general practice in the Island, by cutting off the bolls and transferring them to the house and there separating

the cotton from the bolls. The method used in the experiments is that in general use in other cotton-growing countries. The Cyprus method leads to waste of time and also causes the lint to be mixed with pieces of leaf, etc., spoiling the appearance of the sample.

In the case of non-irrigated cotton the field was first cultivated three times and then ridged and sown by hand with seed which has been previously soaked in water for twenty-four hours and then mixed with dry sheep dung.

Thinning in this case was done thirty days after sowing and the field was hoed only once in order to preserve the soil moisture.

EXPERIMENT TO FIND OUT THE BEST TIME FOR SOWING
THE LOCAL VARIETIES "TITSIROS" AND "TRIUMPH."

This experiment was carried out at Trakhona. A field of three donums in area was divided into fourteen sections of about one-fifth of a donum. Between the sections a strip of one yard wide was left and each of the fourteen sections was again divided into two equal parts.

One-half of each section was sown with *Titsiros* and the other half with *Triumph*, the sowing of each section being done on a different date, the first section being sown on March 17th and the last on June 26th.

The results are shown in the following table :—

Date of sowing	No. of Section	TITSIROS		No. of Section	LOCAL TRIUMPH	
		Yield ok. dms.	Yield p.d. ok. dms.		Yield ok. dms.	Yield p.d. ok. dms.
17.3.30	I(a)	19 200	214 200	1(b)	15 200	170 200
26.3.30	II(a)	18 200	203 200	II(b)	12 —	132 —
3.4.30	III(a)	15 200	170 200	III(b)	12 —	137 200
17.4.30	IV(a)	15 —	165 —	IV(b)	11 —	121 —
24.4.30	V(a)	16 —	176 —	V(b)	10 200	115 200
1.5.30	VI(a)	14 200	159 200	VI(b)	11 —	121 —
8.5.30	VII(a)	12 200	137 200	VII(b)	9 200	104 200
15.5.30	VIII(a)	11 200	126 200	VIII(b)	10 200	115 200
22.5.30	IX(a)	12 200	137 200	IX(b)	9 200	104 200
29.5.30	X(a)	11 200	126 200	X(b)	8 200	93 200
5.6.30	XI(a)	10 200	115 200	XI(b)	9 —	99 —
12.6.30	XII(a)	9 200	104 200	XII(b)	8 —	88 —
19.6.30	XIII(a)	10 —	110 —	XIII(b)	2 —	22 —
26.6.30	XIV(a)	10 —	110 —	XIV(b)	2 —	22 —

On examining the above table it will be observed that *Titsiros* gave a better crop than *Local Triumph*.

Both varieties gave a better yield when sown in the latter part of March and during April than when sown in May and June.

Early sown cotton almost completely escaped the pink and spiny boll worm attack because it was ready for picking during August and the first part of September, before the insects became abundant.

The heavy rain which fell in April had no ill effects on the cotton sown previously, contrary to the local belief that to sow cotton early is to risk its destruction by such late rain.

Cotton sown in the first part of May had as many bolls as that sown in March but they were late in maturing and were heavily attacked by the boll worms and consequently gave a smaller yield of lower quality.

June sown cotton was a complete failure as regards both yield and quality of lint.

TRIALS WITH THE IMPORTED VARIETIES "MESOWHITE" (FROM MESOPOTAMIA) AND "SAKELLARIDES" (FROM EGYPT).

The following table shows the results obtained from the various plots :—

Varieties	TRAKHONA		ORNITHI		KOUKLIA		KOUKLIA RESERVOIR				
	Yield	p.d.	Yield	p.d.	Yield	p.d.	Yield	p.d.	Ginning		
	ok.	dms.	ok.	dms.	ok.	dms.	ok.	dms.	ok.	ok.	dms.
Mesowhite (dry)	—	—	—	—	—	—	44	—	1	3	193
" (irrigated)	129	200	130	200	—	—	—	—	1	3	138
Sakellarides ..	167	—	125	200	84	—	—	—	1	3	200
Titsiros	—	—	—	—	156	—	—	—	1	3	013

Mesowhite although giving rather a low yield proved to be very valuable cotton for Cyprus owing to its early maturing capacity and the good quality of the lint. If sown early and treated properly it will be possible to escape completely the attack by boll worms.

Sakellarides did well at Trakhona and Ornithi but was rather a failure at Kouklia owing to the nature of the soil (stiff clay). The excellent quality of the lint produced by *Sakellarides* is well known.

EDITORIAL AND ADVERTISEMENT NOTICES.

All communications for publication should be addressed to the Editor *Cyprus Agricultural Journal*, Department of Agriculture, Nicosia.

Communications are invited, written on one side of the paper only. It should be understood that no contributions or specimens can be returned unless postage is prepaid.

Copies of the *Cyprus Agricultural Journal* can be obtained on application to the District Commissioners, or to the Department of Agriculture, price 3cp. per number, or by post 3½cp.

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SCALE OF ADVERTISEMENT CHARGES.

A uniform reduced rate is charged for all advertisements which covers their insertion in the English, Greek and Turkish issues respectively.

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The "*Cyprus Agricultural Journal*" is published in March, June, September and December.

The Editor does not necessarily endorse the statements or opinions expressed in contributed articles, the responsibility for which rests with the authors.

The Position of Citrus Oils.

WE glean the following from the October number of *The Perfumery and Essential Oil Record* :—

“The oranges available in Sicily for the production of oil this year are about 40 per cent. less than for the last crop and the stocks of sweet oil carried over from last season will not compensate for this deficiency. Owners of fruit will prefer to sell for edible purposes rather than accept from oil-producers rates based on present essence values. Therefore, unless much lower quotations come from other sources, higher levels for Sicilian oil are to be looked for. The well-known and approved bouquet and volatile flavour of the Sicilian and Calabrian oil is due to it being hand-pressed by sponge process, using unripe fruit. Some people who have tried other origins have returned to the old Messina quality.

As regards lemon oil, the situation is very serious on account of the current prices. Continued decline in the market curve will result in less production, especially of hand-pressed, which is really the only quality worth while. At recent range for the latter, say 4s. to 5s. per lb., lemon would have to be bought at a loss to the growers. Figures will illustrate this better. Two trees of normal age are necessary to produce 1,000 lemons and those lemons give about 16 Sicilian oz. of oil (1 Sicilian oz.=315 grammes, approximately 11 ozs. avoirdupois) and an average of 4 kilos (8.8 lb.) of citrate of lime.

Now, the cost to the growers of the produce of the two trees (excluding value of land, installation of trees and the management) is estimated at about 18 lire (3s. 10d.), a figure covering the watering, manures, labour, pruning and taxation. To harvest and convey to the factory would require 6 lire (1s. 3d.) and to transform into by-products, say oil and citrate, 10 lire (2s. 1d.)—in all 34 lire (7s. 2d.) per 1,000 lemons without a penny profit to the makers. Now, the lemon oil at present quotations would give 13.60 lire (2s. 10d.) and citrate of lime, at the coming season's price, 12 lire (2s. 6d.), together 25.60 lire (5s. 4d.). Thus there is a loss of 8.40 lire=1s. 10d. English coinage, for every two trees and every 1,000 lemons.

It is, therefore, readily understood that growers and makers cannot afford to go on losing money, and the result must be a reduction, sooner or later, in the oil and citrate out-turn. If prices continue bad, proprietors will not give the necessary manures and watering to the trees, with the result that the prospective crop will be smaller.

The coming fruit crop, including that to be shipped in boxes, is considered at least 30 per cent. less than the last, and as this was a very big one, next season's can be considered as a normal one. If the oil price continues low, fruit in boxes can be sold

cheap and the increased consumption would leave much less lemons for oil.

The lower prices of oil are explained by the very big crop this year arrived when the financial depression was at the maximum and holders were forced to sell to meet engagements. Many of the pressers lost their profits made by a good many years of hard work. Consequently, if, in the coming season, the pressers do not see the possibility of getting a minimum for living, they will reduce production to the very lowest.

It is thought that a price between 7s. and 8s. would be fair for the consumers and would permit the making of the oil at a fair margin of profit to the growers and the producers.

Italy, like other countries, has been experiencing some economic difficulties. Being an eminently agricultural country and all produce being of much reduced value, Italians are receiving considerably less money for their products. They have been facing, however, all difficulties with great energy and are sure that the near future will see the end of their troubles."

Citrus Oils by Machine.

THE following note will be of interest to our citrus growers in this Island. It is considered that machine-pressed citrus oils cannot be compared to the hand-pressed either in flavour or quality. Nevertheless more attention is being given to machine extraction and further information in regard to this machine is being sought by the Agricultural Department.

"New plant is continually being introduced, and the machine for separating the zest of the fruit prior to the extraction of the essence, which we are now describing seems to mark another step forward in the mechanical aids to oil recovery.

The fruits to be treated are poured into the machine which carries a variable number of rasps turning on a vertical plane, the output varying according to the number of rasps. The fruits are kept in contact with the rasping sheets by palettes which are raised and allow the fruits to fall away when they are considered to be sufficiently peeled. The granulated peel falls into a receptacle whence it is recovered in the form of a coarse meal containing no added water. The meal is placed in a continuous press, or simply in a hydraulic press and the oil pressed out. The liquid is decanted and the oil clarified by treatment in a special 'Laval' centrifuge. It is claimed that oil yielded by this process is perfectly clear; it has had no contact with water or alcohol, and is said to be very rich in oxygenated odorous principles.

The marc from the press is distilled in vacuo in a special retort."

Protection of Tobacco from Injury by Insects.

ACCORDING to a memorandum received from the Tobacco Federation of the British Empire, some recent experiments have shown that the most satisfactory method of freeing tobacco from the insects (particularly the tobacco beetle *Lasioderma sericorne*), which are liable to cause serious damage to it is by subjecting the tobacco to a low temperature, which besides destroying the insects does not injure the tobacco in any way either as regards texture, flavour or colour.

The tobacco may be treated in bales provided the bales are not too tightly packed together. It is essential that the whole of the tobacco to the centre of the bales should be brought to a temperature of 10° F. and kept at that temperature for at least 48 hours.

In the experiments the bales of tobacco were placed in a refrigerator maintained at a temperature of 9° F. and after twelve days the temperature at the centre of the bales had not fallen below 12° F. and it required a further period of twelve days before the temperature reached 10° F., after which two further days were sufficient to destroy completely all stages of the insects.

When tobacco is removed from cold storage care must be taken to avoid the condensation of moisture on it, which is very liable to occur and may cause serious damage to the tobacco.

Fumigation with hydrocyanic acid gas, which treatment is in general use for the destruction of insects in tobacco, was found to be less effective than refrigeration owing to the gas not penetrating completely into the bales of tobacco.





Cyprus Stand at the Colchester Civic and Empire Week.

The Autumn Races.

It was unfortunate that owing to heavy rain on November 1st the meeting fixed for November 2nd had to be postponed. Excellent weather favoured the meetings held on November 9th and 16th and a large attendance enjoyed excellent sport on both days. The Committee had increased the stakes for all races and also gave a prize of £5 to the breeder of the winning horse in each race. This latter innovation is highly commendable in that it gives definite encouragement to horse-breeding and tends to keep up the interest of breeders.

The public also had the benefit of an improved distribution of the small sweepstakes held on each race. A big sweepstake on the Nicosia Handicap on November 16th was won by Mr. Panos Lanitis, Limassol (£84), the second horse being drawn by Mr. Ch. Symeonides of Nicosia (£36) and the third by A. Behjet Eff. of Nicosia (£12). There were also eleven prizes for other starters at £1 1s. 7cp. each.

The full results of the races are given below.

The next Races will be held on April 12th, 19th, and 26th, 1931.

RESULTS NOVEMBER 9TH.

1st Race.—Stewards Plate. 2nd Class Horses, £22.

About 7 furlongs.

1st M. H. Kutchuk's JIHANYANDI 160 lbs. 2nd M. H. Kutchuk's ABDUL FETTAH 162 lbs. 3rd S. Michaelides' DOXA 152 lbs.

5 started. Time 1.41½.

2nd Race.—Stand Plate.—3rd Class Horses, £22.

About 6 furlongs.

1st R. J. Roe's TALLY 159 lbs. 2nd Djemal Eff.'s NELL GWYNNE 147 lbs. 3rd Miss Joan Manley's MAZDA 141 lbs.

6 started. Time 1.25.

3rd Race.—Island Plate.—4th Class Horses, £18.

About 5 furlongs.

1st Yiannakos Sava's HELENE 138 lbs. 2nd Christos Sava's HYDRA 155 lbs. Fahri Ali's NADJIE 132 lbs. finished first but was disqualified for crossing.

12 started. Time 1.14½.

4th Race.—Nursery Plate.—Colts and Fillies, £18.

About 4 furlongs.

1st Djemal Eff.'s NELL GWYNNE 162 lbs. 2nd R. J. Roe's TICKLER 146 lbs. 3rd M. H. Kutchuk's LAURANT 137 lbs.

6 started. Time 0.55.

5th Race.—St. George's Hurdle Handicap, £18.

About 9 furlongs.

1st D. Srgt. Major Faik's MAJOR 144 lbs. 2nd M. H. Kutchuk's JIHANYANDI 154 lbs. 3rd Srgt. Major Dervish Hassan Eff.'s ANTI DURAN 144 lbs.

4 started.

RESULTS NOVEMBER 16th.

1st Race.—The Juvenile Handicap.—Colts and Fillies, £18.

About 4 furlongs.

1st Djemal Eff.'s NELL GWYNNE 168 lbs. 2nd R. J. Roe's TICKLER 144 lbs. 3rd Andreas Loukas' ORPHEUS 128 lbs.

6 started. Time 0.53½.

2nd Race.—The Seniors Handicap.—2nd Class Horses, £22.

About 7 furlongs.

1st R. J. Roe's TALLY 151 lbs. 2nd M. H. Kutchuk's JIHANYANDI 168 lbs. 3rd M. H. Kutchuk's ABDUL FETTAH 168 lbs.

6 started. Time 1.40.

3rd Race.—Nicosia Handicap.—4th Class Horses, £18.

About 5 furlongs.

1st Yiannakos Sava's HELENE 138 lbs. 2nd Fahri Ali's NADJIE 136 lbs. 3rd Christos Sava's HYDRA 152 lbs.

14 started. Time 1.12½.

4th Race.—The Olympus Handicap.—3rd Class Horses, £22.

About 6 furlongs.

1st Djemal Eff.'s NELL GWYNNE 160 lbs. 2nd R. J. Roe's TICKLER 134 lbs. 3rd Miss Joan Manley's MAZDA 134 lbs.

5 started. Time 1.24.

5th Race.—Tally-Ho-Handicap, £18.

About 9 furlongs.

1st M. H. Kutchuk's JIHANYANDI 156 lbs. and D. Srgt. Major Faik's MAJOR 146 lbs. 3rd Srgt. Major Dervish Hassan's ANTI DURAN 134 lbs.

Dead-heat. 3 started.

NOTICE.

GOVERNMENT Stud Animals will be stationed as follows until further notice :—

Stallions.

Name or number.					Where stationed.
TEMERAIRE ... ..	...	...	...	...	Athalassa
BLAWBARE ... ..	...	...	...	...	Limassol.
WATERKOSCIE ... ..	...	...	...	...	Lefkoniko.
PLYMOUTH ROCK ... ..	...	...	...	...	Athalassa.
MOLESKIN ... ..	...	...	...	...	Larnaca.
PITCHFORD ... ..	...	...	...	...	Famagusta.
DOLMA BAGCHE ... ..	...	...	...	...	Ayios Theodoros.
MAZARIN ... ..	...	...	...	...	do.
CORBY BRIDGE... ..	...	...	...	...	Yialousa.
MILLSTREAM ... ..	...	...	...	...	Rizokarpaso.
CANTERBURY ... ..	...	...	...	...	Paphos.
LIFE LINE ... ..	...	...	...	...	Vatili.
LLWYNOG'S MODEL ... ..	...	...	...	...	Polis

Bulls.

No. 85/374 Half Bred...	...	...	Kyrenia. Mr. Haralambides.
„ 105/394 Shorthorn...	...	...	Athalassa.
„ 126/415 Native ... ..	...	...	Ayios Theodoros.
„ 132/421 Native ... ..	...	...	Polis.
„ 133/422 Dutch Bull ... ..	...	...	Athalassa.
„ 135/424 Half Bred ... ..	...	...	Limassol.
„ 137/426 Native ... ..	...	...	Paphos.
„ 138/427 Ayrshire ... ..	...	...	Agricultural Dept., Nicosia.
„ 139/428 do. ... ..	...	...	Larnaca.
„ 140/429 Native ... ..	...	...	Lefkoniko.
„ 141/430 Half Bred ... ..	...	...	Athalassa.

VII. THE CYPRUS AGRICULTURAL JOURNAL ADVERTISEMENTS.

No. 142/431	Native	...	...	...	Athalassa.
„ 143/432	Half Bred...	...	...	...	do.
„ 144/433	do.	...	...	...	do.
„ 145/434	Native	...	...	...	Rizokarpaso.
„ 146/435	do.	...	...	...	Famagusta.
„ 147/436	do.	...	...	...	Polemi. Mr. G. Theophanides.
„ 148/437	do.	...	...	...	Alektora. Mr. L. Loucaides.
„ 149/438	do.	...	...	...	Vatili.
„ 150/439	do.	...	...	...	Yialousa.

Jack Donkeys.

No. 32	...	...	...	...	Yialousa.
„ 38	...	...	...	...	Rizokarpaso.
„ 39	...	...	...	...	Ayios Theodoros.
„ 40	...	...	...	...	Larnaca.
„ 41	...	...	...	...	Polis.
„ 42	...	...	...	...	Athalassa.
„ 44	...	...	...	...	Vatili.
„ 45	Paphos.
„ 47	Famagusta.
„ 48	Athalassa.
„ 49	Limassol
„ 50	Lefkoniko.
„ 51	Athalassa.



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Chrome, Balata, leather and camel-hair beltings

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The Cyprus Agricultural Journal.

A QUARTERLY REVIEW

OF THE

AGRICULTURE, FORESTRY AND TRADE OF CYPRUS.

Vol. XXVI., Part 2.

JUNE, 1931.

Price 3cp.

EDITORIAL NOTES.

RAINS have continued exceptionally late this season and although they have caused some damage to the cereals, they have greatly benefited the growth of vetches, favetta and other spring crops and have facilitated the more extensive planting of summer crops. The fruit orchards have in general also benefited by the late rains.

* * * * *

The late spring rains have also favoured the late blossoming of wild melliferous flowers which promises a good production of honey this year.

* * * * *

On the other hand the heavy rains followed by warm weather have favoured the growth of the Downy Mildew of the Vine (*Plasmopara Viticola*) and a serious outbreak has occurred in the vineyards of the Paphos District. It has also occurred, but to a lesser extent, in the vineyards of the Limassol and other Districts. The Agricultural Department has placed at the disposal of growers spraying machines and made arrangements for supplies of spraying material.

A poster has been printed and posted in all vine-growing villages calling attention to the seriousness of the disease and the necessity for prompt action and indicating where and how advice and assistance may be obtained.

Growers, however, have been slow to spray their vines and it is feared considerable damage has occurred particularly in the Paphos vineyards.

A special article on the Downy Mildew of the Vine, more generally known in Cyprus as "Peronospora," was published in the "Agricultural Supplement" for June and widely circulated in the vine-growing villages.

Certain varieties of wheat which have been under trial the last few years are of promising character for cultivation in Cyprus and it is proposed to carry out more extensive tests with same on the lands acquired at Morphou for the Central Experiment Farm. It is hoped that appreciable quantities of approved varieties will be available for distribution to farmers for sowing in 1932.

* * * * *

Australian wheat has been imported into the Island for milling purposes and is being sold locally at 4s. 6cp. per kilé.

* * * * *

Owing to the fact that the production of barley is less than that of last year, and to a certain demand from Greece, the price of barley has risen to 3s. per kilé. Imports of barley from Anatolia, which is being sold at 2s. 4cp. per kilé, will reduce the price local barley has been fetching.

* * * * *

Both water and sweet melons are now on the market and a large production is expected as cultivation has been considerably extended and new areas have been placed under this crop. The South African and American seeds imported in 1929 have given excellent results and an enquiry has been received for melon seeds for export. Palestine has asked for permission to export melons to Cyprus as the import restrictions in Egypt make it difficult to dispose of that crop in Palestine.

* * * * *

The production of cherries is very small this year compared with 1930, owing to the late frosts. Larger quantities of imported varieties have, however, come on the market this year which indicates that the local varieties are gradually being replaced by the better imported types. The Department of Agriculture imported several more new export types last year and active measures are being taken to render available to growers a large number of young grafted trees of the better varieties suitable for the export trade.

The production of apples owing to the late frost and attacks of the Codlin Moth is likely to be much inferior to that of last year.

* * * * *

The Department of Agriculture recently imported, through the courtesy of the Canadian Government Trade Commissioner for Egypt and the Near East and the Department of Agriculture of Canada, three varieties of Canadian seed potatoes for trial in Cyprus. These have been grown at Famagusta and Livadhia (Larnaca) and have given excellent results. Farmers interested in this test may see samples of the potatoes at the Offices of the District Agricultural Officers of Famagusta and Larnaca or at

the Director of Agriculture's Office at Nicosia. The varieties are "Green Mountain," "Bliss Triumph," and "Irish Cobbler." The yield per donum at Famagusta was at the rate of 4,132 okes in the case of the first mentioned variety, 3,388 okes in the case of the second variety and 3,283 okes in the case of the third; the results of the Livadhia experiment are not yet to hand.

* * * * *

Spraying of vines against *Eudemis Botrana* has been carried out more effectively than last year and growers begin to realize that spraying is necessary if this disease is to be checked.

* * * * *

The locust campaign ended early in June, the number of true locusts (*Dociostaurus maroccanus*, Thnb.) occurring this year being considerably below the number occurring in the last few years. "Tsakroacrida" (*Calliptamus italicus*, L.) were about as numerous as in the previous year.

"Vrouchos" (*Tettigonia viridissima*, L. etc.) were also less numerous and were accepted for purchase with the locusts but at a lower price.

29,815 okes (37½ tons) of locusts and 2,067 okes (over 2½ tons) of "Vrouchos" were purchased and destroyed.

Poisoned bran bait was used over several areas as was done last year.

* * * * *

Melons appear to have suffered more from insect attacks this year than usual, applications having been received for treatment against insect pests in several areas. The pests complained of were thrips, aphids and two kinds of beetle (*Epilachna chrysomelina*, F. and *Aulacophora foveicollis*, Kust.), and the treatment applied given satisfactory results.

* * * * *

The Cyprus Stud Book issued by the Cyprus Turf Club has recently been published and copies may be obtained at the Petit Bazaar, Victoria Road, Nicosia. The new edition of the Stud Book is revised up to the 31st December, 1930, and is well got up. The book should be of considerable value to those interested in horse breeding and racing in Cyprus.

* * * * *

A new process of converting flax straw into yarn and cloth has been brought out by Messrs. Watson and Waddell of Ireland. The retting is done after the fibre has been extracted and twisted into a rove, or heavy cord. This process, if successful, would do away with the tedious work of handling heavy loads of waste matter and water in the retting pool. Retting, at one stage or another, cannot be altogether avoided.

Flax growing with a view to fibre production is developing in Syria, and one of the larger growers recently visited Cyprus to obtain first hand information on the methods followed in Cyprus and on technical matters.

This year's flax crop in Cyprus has been a good one. The fibre market, however, is still in a very unsettled condition; it is felt, however, that it could hardly become worse, and that a change must be for the better.

The linseed market is fairly steady, with prices still above pre-war, and there is a good demand.

Although flax, as well as hemp growing, is not very remunerative at the present time, it may become so in the near future, and small consignments of both flax and hemp have been shipped by the Agricultural Department to Belfast, just important enough to keep Cyprus flax before the merchants and spinners.

Many demands for the Departmental flax de-seeding machine have been received this season from Messaoria farmers. This proves that the value of the flax straw—apart for the linseed—is being recognized in a more general way. The ordinary way of threshing the flax, either by "doukani" or by a grain threshing machine, injures the straw to such an extent that it cannot be used for fibre. The de-seeding machine started its tour in May, and it is hoped that in turn it will serve all flax growers concerned. When working normally, this machine deals with no less than ten donums per day.

The attention of flax growers might profitably be directed to the potential local uses of flax fibre. A great variety of articles of every day use can be made from it, beginning with heavy grain sacks and ending with face towels. The Spinning and Weaving School at Zodia is open for inspection on week days, and interested persons are invited to visit it. Home spinning and weaving of flax, on modern implements, would not only relieve the local fibre market, but also would provide profitable and pleasant work to many women and girls.

* * * * *

Despite the favourable conditions for cotton planting there has been no increase in the area planted this year. This is due to the poor demand for cotton and the low prices. The most gratifying feature about cotton cultivation has been the keen demand for pure seed. Since the success with "Mesowhite," the variety imported from Iraq, the supplies of this variety, offered for sale by the Department of Agriculture, have been very quickly taken up. The cotton sown during the latter part of March and early April, at the Metochi Government Demonstration Farm for schoolmasters, is doing exceedingly well. It has been repeatedly pointed out that early sown cotton has many advantages over late sown for not only does it produce heavier yields but usually escapes the attacks of the Pink Boll Worm.

ST. BARNABAS FAIR.

The St. Barnabas Fair was held at Famagusta on the 10th and 11th June and there was a large attendance.

The following figures give a record of the sales as compared with the sales of 1930 :—

Kind of animal sold	1930			1931		
	No. sold			No. sold		
Swine	85	..	76	..	..	76
Donkeys	305	..	377	..	..	377
Horses	29	..	48	..	..	48
Mules	187	..	134	..	..	134
Oxen	228	..	204	..	..	204
Camels	—	..	2	..	..	2

According to estimates furnished by the Famagusta Municipal Authorities the animals sold at this Fair were valued at £4,552 as compared with £5,804 in 1930. Although there was a good attendance of buyers from Syria and Egypt the prices were generally lower than those of last year.

Memorandum on the Drying of Figs.

BY THE IMPERIAL INSTITUTE.

FIGS that are to be dried should be “dead” ripe when harvested. The usual practice is not to pick the figs but to allow them to drop. They should not be allowed to remain on the ground for more than two or three days.

In Smyrna the figs are spread on layers of rushes in the open air, and are moved by hand every day, till they are sufficiently dried, which generally takes from 2 to 4 days. The smallest figs dry most quickly and are removed first. The dried figs are usually stored till the end of the season, after which they are graded for packing.

In California it is a common practice to dip the figs, before drying, in an alkaline solution, a typical solution being one containing 10 lb. of salt and 10 lb. of slaked lime per 100 gallons. Dilute caustic soda is also stated to be sometimes used. This process removes some of the hairs from the fruit, besides softening it and improving its appearance. In some cases the fruit is also “sulphured,” i.e., exposed to the fumes of burning sulphur. This has a bleaching effect and in addition it kills insects and insect eggs.

Erinose of the Vine.

ERINOSE is a common disease of the vine which appears as swellings on the upper surface of the leaves with corresponding depressions of the lower surface.

When these swellings are numerous they cause considerable deformation of the leaves but even badly affected leaves are not discoloured in the way characteristic of most fungus diseases.



Upper surface of vine leaf showing swellings.

The depressions on the under side of the leaves are filled with a thick woolly growth which is white early in the attack but later darkens and finally becomes dark brown during the summer. The diseased patches are usually small and scattered, only a few small areas appearing on each of the affected leaves, but in the case of severe attacks much of the leaf may be occupied by the swellings and the lower surface is then correspondingly covered with the mat of woolly growth.

The white woolly growth which is characteristic of this disease is sometimes mistaken for a fungus, but the hair-like

growths forming the woolly mat are produced by the epidermal cells of the leaf, which are stimulated to develop in this way by the bites a minute mite, *Phytoptus vitis*.



Lower surface of vine leaf showing depressions filled with woolly growth.

These mites, which are so small that they can hardly be seen by the naked eye, live amongst the woolly growth and feed on the tissues of the leaf.

Erinose is not usually a very serious disease and the damage normally caused by it is small, but it may seriously affect the growth of young vines or increase the damage due to *Oidium*, the powdery mildew.

Dusting the vines with sulphur is the method most usually employed against this mite and several sulphurings should be carried out during the late spring and early summer. Where the vines are regularly dusted against *Oidium* there is usually little trouble from the attacks of this mite. Another treatment which is recommended in the case of severe attacks is to pour or spray boiling water over the vine stumps during the winter, to destroy the mites sheltering under loose bark or in cracks,

Cyprus at the British Industries Fair and the British Cotton Textile Exhibition, 1931.

THE two photographs reproduced on pages 51 and 52 of this issue show the excellent display of Cyprus products arranged by the Trade Commissioner for Cyprus in London at the British Industries Fair and the British Cotton Textile Exhibition, which exhibitions were held simultaneously at Olympia and the White City in February 1931.

The following extracts are quoted from a report by the Trade Commissioner on the participation of Cyprus at these Exhibitions :—

“ Cyprus was represented in the Empire Marketing Board's Section.

The British Industries Fair was again held at Olympia, and this was the fourth successive year in which this Colony took part in it. The Fair appears to gain in popularity and usefulness from year to year. It was attended by over 160,000 buyers from the United Kingdom, and nearly 35,000 members of the public. The Cyprus stand was honoured with a visit by Her Majesty the Queen who was accompanied by Their Royal Highnesses The Duke and Duchess of York, and The Duke of Gloucester.

The enquiries dealt with were more numerous and more definite than in any previous year. The most important were for oranges, oil seeds, skins, carob products, almonds, and cigarettes, and buyers have been placed in touch with sources of supply. The exhibit which attracted most interest was oranges (supplied by arrangement with a London importer) in which there has been a small but steady trade since the year began.

A small collection of Cyprus products was lent to Imperial Chemical Industries, Ltd., for display on their stand a portion of which was designed to illustrate the resources of the Colonies where their manufactures are in use.

The British Cotton Textile Exhibition was organized at the White City as a section of the British Industries Fair and was held simultaneously. Empire countires were restricted to displaying raw materials, but no objection was raised to the use for decorative purposes of woven and finished textiles which would not compete against similar goods manufactured within the United Kingdom. With the help of the Director of Agriculture a varied collection of raw cotton, yarn, and textiles was arranged in an open court.

Her Majesty the Queen visited the Exhibition on the opening day and was pleased to express admiration of the Cyprus fabrics, particularly the brightly coloured curtains, carpets and Paphos towels of which she graciously accepted specimens. Her Majesty closely inspected all the exhibits.

Buyers of manufactured cotton goods, from abroad as well as from all parts of the British Isles, formed the majority of the trade visitors, but spinners from Lancashire and from Southern Europe were interested in Cyprus as a source of supply of the raw material. Foreign enquiries for lace and embroidery were also received."

Report on an Experimental Consignment of Cyprus Water Melons.

BY THE EMPIRE MARKETING BOARD.

AN experimental consignment of water melons was shipped from Cyprus on the 27th August, 1930, and was received at the office of the Trade Commissioner for Cyprus on the 16th September, 1930. The consignment consisted of six melons of a long, pink-fleshed variety, and six of a round, red-fleshed variety, each variety being packed separately in a strongly made case.

A preliminary examination was made, soon after its arrival by the Board's officers at the Trade Commissioner's office. Subsequently, samples were taken to the Covent Garden Laboratory for more detailed observations and to secure trade opinions on the market possibilities of the fruit.

PACKING.

The packing of the melons appeared to be fairly satisfactory, although the cases were somewhat too heavy. Both measured 36 inches by 24 inches by $12\frac{3}{4}$ inches externally, the end boards were one inch and the top, bottom and side boards were three-fourths of an inch in thickness, while each box was divided into six compartments by three-fourths of an inch board partitions. Gaps of three-fourths of an inch between the sides and top and bottom of each box provided fairly adequate ventilation.

The melons were individually wrapped in rough unglazed white paper and packed in the box with wood wool. Two grades of wood wool were used, one fairly fine and the other of medium texture. The wool was so arranged in the compartments that a nest was formed for each melon. A fairly thick layer of wood wool between the fruit and the lid of each box completed the pack.

The method was somewhat more elaborate than that used for Spanish water melons. These are packed in a case which resembles the well-known Valencia Honeydew melon case, but which varies in dimensions to accommodate different sizes of fruit. The case is made of fairly thin wood with a single cross partition and is roped round as a protection against breakage. Large quantities of straw are employed as packing material. This case usually contains 8, 10 or 12 fruits,

PRELIMINARY EXAMINATION.

Round Melons.

Five of the six round melons appeared sound; the sixth had commenced to rot at the calyx end and a hole, about two inches in diameter and surrounded by a narrow band of soft, decayed tissue, had developed leaving the interior exposed. In addition, the skin of the largest melon was scraped, but the wound had not developed any rotting.

Of the five sound melons, three were firm and "gave" only slightly when pressed at the calyx end. The remaining two "gave" appreciably and when shaken sounded as though half full of liquid. One of these was cut; a fairly large quantity of liquid ran out accompanied by loose seeds and pieces of pulp and it was apparent that the melon was too ripe.

Long Melons.

Two of the melons had split across the broadest part of the fruit and in one case a rot had developed at the wound. The others were quite sound and firm; two which were cut appeared to be slightly under-ripe.

DETAILED EXAMINATION.

Four round and four long melons, including the two split specimens, were taken to the Covent Garden Laboratory for further observations. The condition of these fruits is described below.

Round Melons.

The characteristics of the melons are summarized in Table 1 and in the following notes. The fruits ranged from 8 to 11 inches in diameter.

TABLE 1.

General Characteristics of the Round Melons on Arrival.

Melon.		Weight in lbs.		Condition.		Colour.
1	..	15 $\frac{3}{4}$	..	Firm	..	Mottled, large, light and dark green areas.
2	..	21 $\frac{1}{2}$	..	Fairly firm, some give at calyx	..	Deep green, even colouring.
3	..	12 $\frac{1}{2}$	..	Fairly firm, some give at calyx	..	Light and medium green striping.
4	..	12	..	Softening, giving easily to thumb	..	Light & dark green mottled appearance.

No. 1.—This melon was kept for ten days before it was cut; the flesh was then in good condition, being crisp, sweet and juicy. The tissue round the seed cavities had commenced to break away slightly, but good slices could be cut which remained intact. This melon was the best of the sample.

No. 2.—This fruit was cut four days after arrival. Externally it was of excellent appearance, but when cut was found to be over-ripe. The pulp had broken down and on cutting the interior contents poured out. The tissue was red, the seeds black and the rind fairly thin.

No. 3.—This fruit was sound when cut. The flesh was red coarse and moderately sweet, but had a poor, cucumber-like flavour. The tissue surrounding the seeds had commenced to shrink and it was not possible to cut a slice which remained intact.

No. 4.—The fourth melon of the sample was unsound on arrival. As already mentioned a hole with very soft edges was present at the calyx end and the exposed flesh was commencing to soften. This injury which was appermost when the case was unpacked had probably resulted from a bruise. The flesh was similar to that of the other melons, being red and coarse and moderately sweet. From the poor, "cucumber-like" flavour and the rather large amount of uncoloured flesh beneath the rind, the fruit appeared to be slightly unripe.

Long Melons.

In Table 2 and the subsequent notes are summarized the general characteristics of the long melons which were taken to the laboratory for examination.

TABLE 2.

General Characteristics of the Long Melons on Arrival.

Melon.	Length in inches.	Diameter in inches.	Weight in lbs.	Condition.	Colour.
1	15½	7½	15	Firm, slight give at calyx. Damaged in transit.	Dark green with faulty marked lighter stripes.
2	17	8	Too wasty to weigh.	Softening	Dark and light green striping.
3	13½	8½	14½	Firm	Light green even colouring.
4	14½	7½	13	Firm	Medium green. Fairly narrow stripes of slightly darker colour.

No. 1.—This melon was found to be damaged when unpacked, a split having developed across the fruit. The flesh was light pink, firm and juicy and in texture was finer than that of the round melons. Eating quality was good, the flesh being sweet, of good flavour and somewhat melting. The flesh was still palatable quite close to the rind. Seeds were dark brown in colour and loose in the tissue.

No. 2.—This melon was also damaged on arrival. The tissue which was still sound was fairly firm and juicy but not very sweet and of poor flavour. The fruit was probably somewhat immature at the time of picking. The seeds were creamy in colour with dark brown edges.

No. 3.—This fruit was not cut until the 26th September, ten days after arrival. The flesh was then commencing to break down, the centre and pulp surrounding the seeds was extremely soft and loose. The flesh was rather flavourless and not at all sweet.

No. 4.—The flesh was medium to coarse in texture and fairly sweet, but had a poor cucumber-like flavour and a rather thick band of uncoloured flesh beneath the rind indicating the slight immaturity of the fruit.

TRADE OPINION.

The opinion of several members of the Fruit Trade was sought regarding the market possibilities of the Cyprus water melons. It was stated that the demand for water melons was small and confined almost exclusively to the Jewish and Italian sections of the community. The greatest demand occurred towards the middle of September, reaching its maximum just before the Jewish New Year. After this date sales were said to be very limited. Supplies are received chiefly from Italy and Spain, and Cyprus would experience severe competition from these countries. A market might be found, however, if Cyprus melons could be sent during the fortnight before the Spanish and Italian imports; that is, during late August and early September.

In regard to the samples of Cyprus melons, it was stated that only the round type was likely to be saleable as the long type was quite unknown on the British market. Spanish and Italian water melons are round and dark green in colour; melon No. 2, Table 1, was of this colour and it was thought that this kind would probably be the most popular. The fruit was criticized on account of the discompositon of the seeds which were so distributed through the flesh that large slices could not be cut.

Water melons were said to realize about 2s. to 3s. each at Covent Garden during the time of greatest demand just before the Jewish New Year; for the remainder of the season 1s. 6d. to 2s. 6d. is a more usual price. To command a satisfactory price however, a water melon should be quite firm and give no sound of loose liquid when shaken. The usual method of determining the condition of the fruit is to squeeze it while held close to the ear; if in good condition the melon gives a definite crackle. Further, the flesh should be red, juicy, crisp and ripe and the rind not too thick.

SUMMARY.

The consignment arrived in fair condition with the exception of one melon of the round and two of the long type. The sound fruits varied in maturity, however, some being definitely too ripe on arrival while others were slightly unripe at that time. These latter kept well for several days and were then sufficiently ripe for consumption.

The packing was satisfactory, but a lighter type of package would be preferable for commercial shipments.

Members of the fruit trade thought the long type of melon unlikely to be very popular as the market is acquainted only with the round type. The demand for water melons was said to be limited and the market well supplied. Late August and early September would probably be the best time to ship supplies from Cyprus.

Imperial Fruit Show, Manchester; Honey Section.

At the Eleventh Annual Imperial Fruit Show to be held at the City Exhibition Hall, Manchester, from October 30th to November 7th, 1931, there will be a Honey Section, three classes of which are open to the Colonies.

Anyone wishing to participate may obtain further particulars, Schedule of Classes and Prizes and Entry forms from the Director of Agriculture.

Entries from overseas should reach the Secretary before the 15th September and exhibits must arrive on the 26th October.

The Department of Agriculture is arranging an official exhibit and exhibits from private producers would be welcomed.

Notes on the Date Palm.

THE Date Palm, *Phoenix dactylifera* is grown in many parts of the low country regions of Cyprus. Although the number of trees grown is not great, the few trees which are to be found scattered here and there thrive wonderfully well.

Dates are not considered of any economic importance in Cyprus nor is any great value placed on the trees, as in most cases the fruit is poor and the yield is low. This non-success is due more to the fact that the varieties grown are of no particular value and the necessary proper attention is not given to the trees, than to anything seriously adverse in the climatic and natural conditions.

The date palm is hardy and drought resistant and although the general conditions are not considered quite as suitable as those obtaining in the principal date-producing countries, there is every reason to believe that the possibilities of increasing the production of good quality dates suitable for local consumption and for export might develop, especially in the Messaoria, if the right varieties were grown and properly tended.

The date palm is not difficult to cultivate. The hot dry climate of the summer months in Cyprus is very suitable and the best conditions under which successful cultivation may be carried out are on rich well drained soils with facilities for irrigation.

Propagation is best done by planting offshoots. Trees so raised bear fruit in about five years, and maintain the variety true to type.

It is essential to have a male tree in the plantation and if the plantation is large there should be at least one male to every hundred female trees.

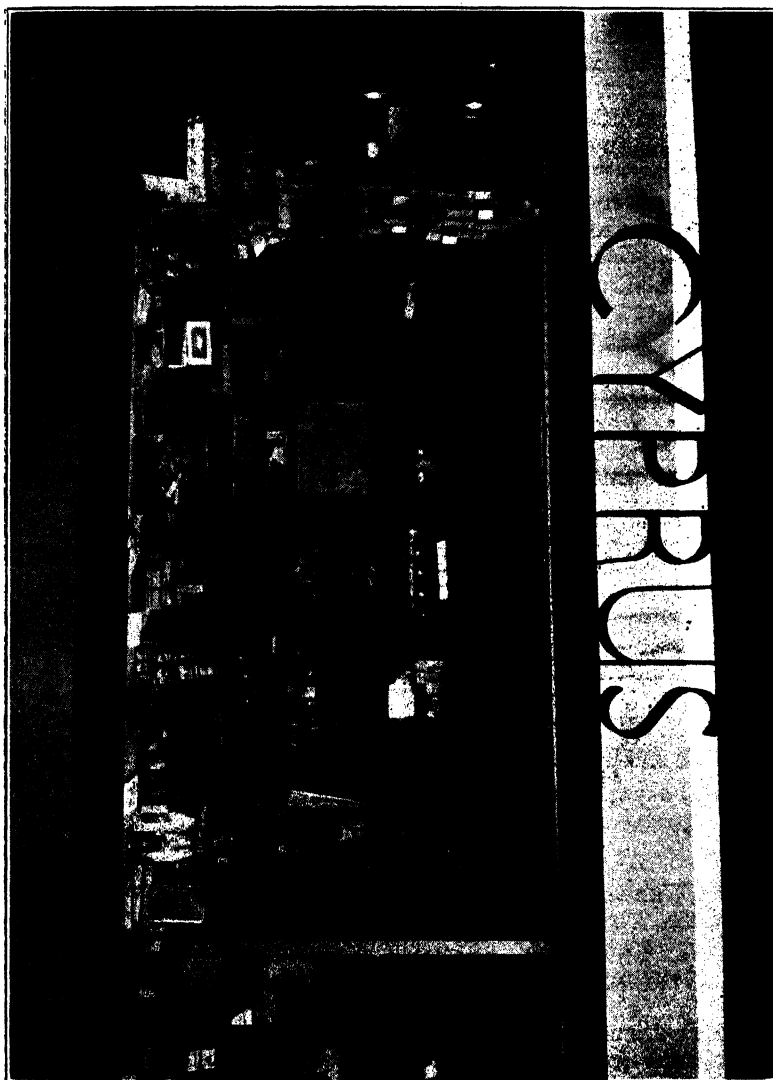
Artificial fertilization is necessary and in important date producing countries, such as Mesopotamia, skilful and thorough pollination is carried out by the cultivators with very special care and attention.

The varieties generally found in Cyprus are similar to the Egyptian varieties and trees resembling the Egyptian "Saidi" variety are found growing in some private gardens.

In 1922 the late King Hussein of the Hedjaz, arranged to secure a supply of specially selected date palm offshoots from Jedda for trial in Cyprus. Again in 1929 the Department of Agriculture imported from Medina thirty-two date palm offshoots of the best varieties. Amongst these varieties were included the following:—

Rubai, Ridi, Shagra, Helwa, Varni, Heliya and Swada.

The palms were planted in the Nursery Gardens of Nicosia, Famagusta and Larnaca and twenty-seven of the thirty-two have become established. The present condition of growth of these palms is satisfactory.



Cyprus Exhibit at the British Industries Fair, held at Olympia, February, 1931.

EDITORIAL AND ADVERTISEMENT NOTICES.

All communications for publication should be addressed to the Editor *Cyprus Agricultural Journal*, Department of Agriculture, Nicosia.

Communications are invited, written on one side of the paper only. It should be understood that no contributions or specimens can be returned unless postage is prepaid.

Copies of the *Cyprus Agricultural Journal* can be obtained on application to the District Commissioners, or to the Department of Agriculture, price 3cp. per number, or by post 3½cp.

Annual subscription payable in advance 12cp. for residents in the six District towns; outside the District towns 15cp.; Overseas subscription 18cp. (2/-).

SCALE OF ADVERTISEMENT CHARGES.

A uniform reduced rate is charged for all advertisements which covers their insertion in the English, Greek and Turkish issues respectively.

As special efforts are now being made to increase the circulation of the Journal in the Colony and Overseas it may be regarded as a valuable medium for advertising.

The following are the rates in force :—

COVER—Full page, 1 year or 4 insertions	...	£2 15 0
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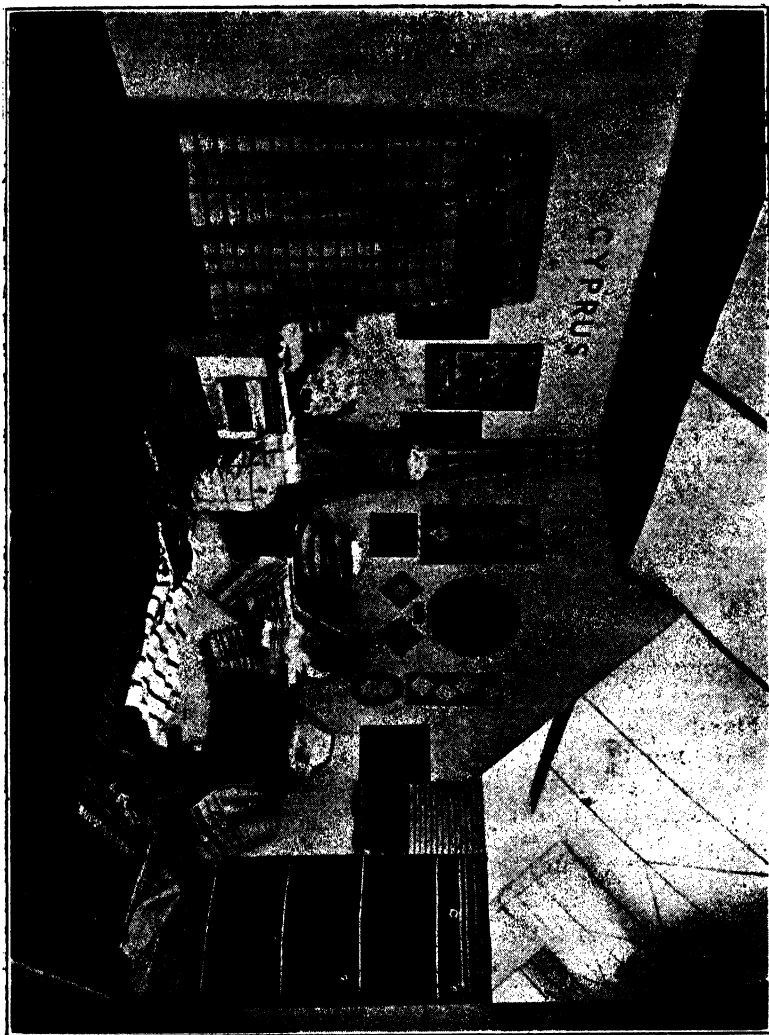
For Wants, Articles for Sale or Exchange, Notices of Meetings, Events, etc., for the first 16 words, 2s. Exceeding 16 words but not exceeding 32 words, 4s. For every additional 8 words 6cp.

These charges include insertion in the English, Greek and Turkish issues.

Advertisements should be written on one side of the paper only, and should reach the Editor, *Cyprus Agricultural Journal* at least 15 days before the end of the month of issue.

The "*Cyprus Agricultural Journal*" is published in March, June, September and December.

The Editor does not necessarily endorse the statements or opinions expressed in contributed articles, the responsibility for which rests with the authors.



**Cyprus Exhibit at the British Cotton Textile Exhibition
held at The White City, February, 1931.**

Memorandum on the Drying of Grapes and Note on the Use of "Dips" in the Preparation of Raisins and Sultanias for the Market.

BY THE IMPERIAL INSTITUTE.

DRYING OF GRAPES.

THE most satisfactory method of preparing raisins from grapes, and that most commonly practised, is to dry them by exposure to the sun, either directly after picking or after first subjecting them to an alkali "dipping" process.

The grapes should be picked when they are fully mature. If they are not to be dipped the branches are deposited at once on trays, not more than one bunch deep, and placed in the sun. After they have partially dried, which may take about 10 days, they are turned. This can be done by reversing another tray over that containing the grapes, and turning the two over. Drying is then continued until it is no longer possible to press juice from the berries between the fingers, which will be, say five or six days after turning. The final stage of drying is then carried out in the shade, the trays being stacked together and the fruit so left for about another week, after which it is ready for packing. The total time required for drying is thus about three weeks, though either more or less may be required according to the weather.

In some cases the grapes, before drying, are subjected to "dipping" for a few seconds in hot dilute soda or potash lye. The principal effect of this treatment is to remove the wax ("bloom") from the surface thus facilitating evaporation. The drying of dipped grapes does not take more than about ten days, including a few days stacking at the finish. Dipping also affects the appearance of the finished product.

LYE-DIPPING.

The method of curing known as "lye-dipping," whereby the fresh ripe grapes are scalded with a solution of alkali and subsequently dried by exposure to the sun or by artificial heat, is commonly adopted in many of the raisin-producing districts of the Mediterranean countries and also in California, especially in areas where climatic conditions most favourable for the preparation of the ordinary sun-cured raisins do not prevail. The process is designed chiefly to facilitate the drying of the fruit by dissolving the waxy covering which constitutes the "bloom" and opening up the pores on the skin, thereby allowing rapid evaporation. Incidentally, the fruit is cleansed and rendered lighter in colour.

The first and most important condition for the production of superior "dipped" raisins is that the grapes should be absolutely ripe. Further, abundance of fresh, flowing water is essential for the washing of the grapes.

General Method.—The process is carried out as follows. The ripe grapes are placed in wire baskets, or perforated galvanized iron buckets, which are suspended so that they can be raised or lowered. The loaded baskets or buckets, are lowered first into pure water in order to rinse the fruit, and then dipped into boiling lye, after which they are again immersed in water and the raisins at once spread out to dry.

The Lyes.—The lyes used consist of solutions of “potash” (potassium carbonate), sodium hydroxide (caustic soda), or sodium carbonate (washing soda); mixtures of these substances are sometimes employed.

In Mediterranean countries the lyes chiefly employed are potash lyes prepared from wood ashes and lime. In Spain a lye is prepared by pouring clean water over a mixture of wood ashes (75 per cent.) and powdered quick-lime (25 per cent.) contained in a barrel, and using the solution (which is drawn off through a hole near the base of the barrel) for the preparation of a diluted lye. The strength of the diluted solution as used depends upon varying circumstances, and is best ascertained by preliminary trial. A quantity of a 3 per cent. solution of caustic soda is sometimes added.

The growers in Smyrna and neighbouring countries use potash solutions similarly prepared, but the “oil-dipping” process is also extensively adopted especially in the treatment of seedless sultanas. Details of the process are given below (“oil-dipping”).

The use of dips is widely practised in the California raisin industry and the following particulars have been obtained from various sources. The composition of the lyes varies on different estates. Potash lyes are prepared by dissolving 1 lb. of potash (potassium carbonate) in 12 gallons of water. Sodium hydroxide, sodium carbonate and sodium bicarbonate are also employed. A lye of sodium hydroxide consists of a 0.1 to 0.75 per cent. solution of that chemical, the most desirable strength being stated to be 0.5 per cent. Lyes consisting of a mixture of sodium hydroxide and sodium carbonate are also said to be used.

According to Bulletin No. 349 (1916) of the United States, Department of Agriculture (“The Raisin Industry”) the following formula has been used for sultana and sultanina grapes at Fresno, California.

“Fifteen pounds of ‘Greenbank’s 98 per cent. lye’ are boiled in 100 gallons of water. This mixture is for grapes containing 25 per cent. of sugar. Should their sugar content be less, enough lye is added to remove the bloom and open the pores of the skin of the grapes. After dipping, the grapes are spread on trays and sulphured for one to one and a half

hours. Observation will show whether it may be necessary to vary this formula a trifle to suit conditions of ripeness and influence of temperature."

Note.—*i.e.*, the Greenbank's lye previously mentioned.

Some growers in California add a small quantity of olive oil to the dipping solution, thus adopting in essentials the "oil dipping" process of Asia Minor (*see below*.)

Immersion.—The time of immersion in the lye is very short and varies with the condition of the fruit, the strength and temperature of the lye, and the thickness of the skin of the grapes. It is continued until the grapes show a just perceptible cracking of the skin, but the immersion must not be unduly prolonged or deep cracks will result. The period is thus best ascertained by practical trial. In Valencia, the time of immersion is stated to be commonly from 15 to 20 seconds up to one-fourth or even one-half of a minute.

Rinsing after Immersion.—In California, the rinsing of the fruit before drying (*i.e.*, after immersion in the lye) is considered to be of great importance. In Spain, however, the fruit is not rinsed after immersion. It is stated to be an open question whether the final rinsing of the fruit serves any useful purpose.

OIL-DIPPING.

The so-called "oil-dipping" process consists essentially of the use of potash or other lyes to which a quantity of olive oil has been added. This process imparts a lustre and softness to the skin of the fruit and is chiefly used in the preparation of seedless and other sultanas. It is largely practised in Asia Minor and also in California.

In Smyrna, the grapes are dipped into a weak solution of wood ash on the surface of which floats a thin layer of olive oil. In Palestine, a much larger proportion of oil appears to be used, a liquor composed of from 3 to 5 parts of lye to 1 part of olive oil being employed for dipping the "Hebron" raisins. The lye is prepared by boiling 2 rotls (about 12½ lb.) of wood ashes in 4 rotls (say 2½ gallons) of water, the clear solution after settlement being used when cool as the lye. It may be added that the production of Hebron raisins is comparatively small.

In California, "oil-dipped" sultana raisins are prepared by dipping the fresh grapes into a solution of sodium bicarbonate on the surface of which is a thin layer of olive oil. The following formula has been used at Woodland, Yolo County, California, for sultana and sultanina grapes:—

"Thirty pounds of English bicarbonate of soda are boiled in 30 gallons of water until dissolved to which are added 70 gallons of water and approximately one teacupful of

genuine olive oil. This mixture is for grapes containing 25 per cent. of sugar; should their sugar content be less, more bicarbonate of soda is added. The bicarbonate of soda must be sufficiently strong to remove the bloom of the grape and open the pores of the skin to facilitate drying. The cup of olive oil added forms a thin film on the surface of the solution. This film is preserved while dipping by adding an occasional teaspoonful of oil, the mixture being kept sufficiently warm so that the oil dissolves perfectly and spreads evenly over the surface.

Three-fourths of a gallon of olive oil will be sufficient to dip five tons of grapes in the mixture as given here. When the solution gets dirty it is renewed."

BLEACHED SEEDLESS RAISINS.

These raisins are prepared by passing, for three to five hours, fumes of burning sulphur over the lye-dipped sultana grapes contained in a suitable receptacle, after which the fruit is spread out in the drying yard. If artificial drying is employed, the sulphur fumes are passed into the chamber in which the fruit is being dried. The treatment has the effect not only of imparting to the fruit a golden yellow colour, but also of destroying any micro-organisms that may be present, thereby improving the keeping qualities of the product.

Publications Reviewed.

HORTICULTURAL ABSTRACTS.

THE publication of "Horticultural Abstracts" by the Imperial Bureau of Fruit Production in March of this year has filled a place in horticultural literature, which has been for a long time vacant.

This quarterly journal has been the outcome of a resolution adopted at the Imperial Horticultural Conference in London in 1930 and its aim has been to epitomise horticultural literature under one cover, and thus to indicate to the reader the general scope of the work concerned.

The contents include sections on general horticulture, viticulture, deciduous fruits, citrus fruits, physiology, chemistry, tropical crops, storage and transport, together with reports of proceedings of conferences dealing with the subject, in various countries, and an index of authors.

We are gratified at the concise manner in which the information has been set forth in this publication and wish the Imperial Bureau of Fruit Production success in its new venture.

GOAT GRAZING AND FORESTRY IN CYPRUS.

By A. H. Unwin, *Principal Forest Officer, Cyprus.*

CROSSBY LOCKWOOD & SON.

THE aim of this book is to convince the public of Cyprus of the importance the bearing goat grazing has in relation to the forestry of the Island.

The economic conditions of goat grazing are first described in Chapter I, while Chapter II deals with ancient and modern references to goat grazing. In the next five chapters the author must have gone to considerable trouble to get together the world-wide data which are quoted. These chapters are of general interest to all students of forestry and collate a mass of opinion and information on the question of grazing in the forests.

In the remaining twelve chapters the particular aspect of the subject in regard to Cyprus is dealt with and Dr. Unwin has tackled his subject in a very full, comprehensive and able manner.

This book is recommended to all those who wish substantial proof of the depredations of the goat in forests.

The book is a valuable addition to forest literature.

* * * * *

A SHORT DESCRIPTION OF THE FORESTS OF CYPRUS.

By A. H. Unwin, *Principal Forest Officer, Cyprus.*

GOVERNMENT PRINTING OFFICE, NICOSIA, 2s. 4½cp.

The history of the Cyprus Forests, a general description of the Island, and notes on the chief types of forests are briefly yet tersely described in the first three chapters. In fact this is the whole tone of the book as the title implies.

The next chapter deals with the economic description of some twenty-seven of the chief species and is of particular interest.

In the remaining eight chapters Dr. Unwin deals with the present state of the forests, the activities of the Forest Department, afforestation, regeneration and artificial plantations.

There are five Appendices in which are given some interesting statistical information and which is of special value in view of the book being published by authority.

The book is illustrated with nine full page photographs by the author.

This publication is in its second edition and should be of interest to readers wishing to visualize generally the situation appertaining to the forests of Cyprus.

DISTRICT NOTES.

Abstracts from the Reports of the Commissioners, Nicosia, Larnaca, Limassol, Famagusta, Paphos and Kyrenia for the quarter ended the 31st March, 1931.

Nicosia District.

THE general rainfall throughout the District for the winter season 1930-1931 has been abundant. The continuous rain in some villages did a certain amount of harm to the barley and the yield is expected to be slightly less than that of last year.

The area sown to wheat is more than that of last year and the yield is anticipated to be greater than that of last year.

The condition of the other products with the exception of broad beans is so far good and a good yield is expected.

Broad beans did less well owing to climatic conditions unfavourable to this crop.

The yield of potatoes is also expected to be good though the fall in prices, which occurred before the sowing season, made farmers generally sparing in the use of manures.

On the whole this year's abundance of rain has done more good than harm and is likely to bring about a bountiful yield from summer crops.

Larnaca District.

THE general rainfall throughout the District for the winter season 1930-1931 has been slightly above normal. The total rainfall at Larnaca has been 17.13 inches. It appears that the barley has suffered from continuous rain during February and that the crop will be a medium one. Wheat prospects are good and vetches and the various bean crops are reported to be in good condition. The rain which fell at the end of March was most satisfactory.

The Nursery Garden at Larnaca, which was flooded last year, has been cultivated again and seedlings planted where the soil was favourable and work continued on the Moslem School Garden at Larnaca.

That of Skarinou was given up under the agreement and the seedlings there were disposed of locally. At Livadhia the fig plantation arranged for last year was planted with fig trees of all varieties and certain experiments are in process of being

carried out with different kinds of Canadian potatoes. The usual work of inspection and instruction in school gardens was done by the Agricultural Supervisor.

The Rat Destruction Officers, three in number, carried on the rat campaign in the carob villages and according to general opinion their work has proved satisfactory. There are a few people who, for various reasons, would like a return to the old method of purchase.

Limassol District.

RAINFALL during the entire quarter was abundant, but never excessive, and was well maintained up to the end which is rather unusual. Cereal crops should therefore be above the average especially as up to the time of writing no adverse influence such as disease or hot winds had been reported.

The winter on the whole was mild and the amount of snow on the mountains less than usual.

Carobs.—The crop now maturing on the trees is expected to be well above the average though it will not of course equal the yield of last year.

Prices fell from 7s. to 6s. per cantar, the average being 6s. 6cp. as compared with 13s. 7cp. in the corresponding quarter of 1930. Despite the low prices, export was fairly brisk and was increasing and it is expected that in the month of April the record export figure of 17,000 tons for the whole Island will be reached. The present stock in hand in Limassol is estimated at 100,000 cantars, or about 22,250 tons.

Raisins.—Prices continued to keep up well and ranged from 3½cp. to 5cp. per oke, with an average of slightly under 4cp. The corresponding average price in 1930 was just a little over 2cp. Export was brisk and reached the figure of 745,300 okes.

Wines.—Export to the United Kingdom and Malta showed a very large increase. As regards Egypt though the exceptionally high figure, due to temporary circumstances no longer obtaining, of the corresponding quarter of 1930 was not reached, the amount exported was highly satisfactory.

It is interesting to note that there was again a small export to France. Prices averaged 15s. 3cp. per load of 36 gallons compared with 19s. in 1930. The range was from 13s. to 17s. per load. The stock in hand is estimated at about 1½ million gallons.

Famagusta District.

Potatoes.—Late frosts affected this product somewhat adversely, but a fair yield is anticipated nevertheless.

Of the previous crop a small quantity still remains on hand and is selling at prices which range between 70 and 73 paras per oke.

Wheat.—There is every prospect of a good harvest, but the somewhat heavy rain experienced during the quarter, added to an early spell of exceptionally mild weather, led to a most marked influx of weeds.

There has been a considerable increase in the amount of land placed under this cereal.

Barley.—Heavy rain and poor prices have resulted in a reduction estimated at about 30 per cent. when compared with last year's production.

Flax.—Economic conditions as affecting cereals have led to a considerable increase in the area planted up under flax and weather conditions have been such that a good yield is anticipated.

Citrus Fruit.—The season which has proved a fairly good one practically closed in March, at the commencement of which month the amount of fruit awaiting shipment was estimated at 8,000,000. It is believed that most of this was marketed partly in Egypt and partly in Greece.

The Agricultural Department has been unremitting in its endeavours to find markets for this product, and consignments have found their way to England and Central Europe.

Tobacco.—The weighing in of tobacco was completed, the total being 48,929 okes. This represents a considerably smaller production than for the corresponding period of the two previous years, due partly to the difficulty experienced in finding a market and to the low price obtainable. For this, however, the planters are themselves largely to blame, as many failed to profit by the expert advice which they received; while many also forfeited the confidence of buyers by mixing low grade leaf with the better qualities.

Paphos District.

THERE was a heavy rainfall during January and February which in some of the plain villages caused damage to the barley crops. Generally speaking it is anticipated that the wheat crop will be a good one on the hills and plain. The barley crop on the hills will be good, and on the plain fair.

Owing to the satisfactory prices obtained for onions last autumn, and the fact that seed was plentiful and cheap, about 60 per cent. more land has been brought under cultivation of this crop.

The land brought under the cultivation of potatoes has also increased by about 20 per cent. owing to the fair prices obtained last autumn and during the winter, and also owing to an abundance of fresh seed at a moderate price.

The cultivation of flax has also increased this year by about 25 per cent., and the heavy rains have favoured the growth which is very promising.

There has not been any marked increase in the extension of orange gardens. The prices obtained for this fruit were very low to start with, realizing 15s. to 22s. per thousand, later however they were sold at 35s. per thousand, a price which was deemed fair when all things are considered.

There was a regular glut of lemons, and the prices were very low, ranging from 3s. to 5s. per thousand, the picking of the crop was therefore not a paying proposition. Many of the growers decided to turn their produce into citrate of lime and lemon oil and the Director of Agriculture who was consulted concerning the matter readily co-operated by arranging for the attendance of an expert, and activities were commenced for the first time in this district during March, under the latter's guidance.

Another interesting development during the quarter was the preparation of a consignment of hemp destined for Belfast. A meeting of hemp growers and merchants was held in my office during February to further the project, the idea being that the shipment should amount to about ten tons. After much persuasion promises totalling to this amount were made, but owing to the usual lack of co-operation were not fulfilled, and the total shipment only amounted to six tons.

Kyrenia District.

RAIN has fallen in abundance, 27 inches having been recorded since September last. Due to lack of sunshine and exceptionally cold winds, crops appear to be backward in certain parts of the District. Fortunately during March, conditions have been more favourable and with a few light showers a better harvest will be ensured than is at present anticipated.

The following crops should have special mention at this time of the year :—

Tobacco.—Great disappointment has been expressed by growers of "Latakia" tobacco, consequent on the principal buyer intimating that he will not purchase any of this variety during the current year, and only a few selected planters have been given orders for "Yellow Leaf." In view of the low price offered for last year's crop and the difficulties experienced in disposing of it, planting of tobacco has been considerably reduced,

Growers are, however, being encouraged to confine their attention to producing a better quality leaf rather than to planting large and often indifferently cared for areas in the hope of finding a market for tobacco which has not had the necessary attention to attract a demand at a remunerative price. The Tobacco Expert has been asked to report to me regularly, as to the general conditions of production, and instructed when visiting tobacco areas to impress upon planters the importance of improving the quality, so that the Cyprus leaf may compete more favourably in the open market.

Beans.—The yield of this crop is likely to be considerably in excess of that of last year, and as far as I can ascertain there is little, if any, of the blight which did so much damage in 1930.

Citrus Fruits.—Due to exceptionally low prices and practically no demand, very little trade has been done in these fruits. There are for instance many thousands of lemons to be seen on the trees or rotting on the ground, and the few that have been sold were disposed of at 2 to 3cp. per 100. In one lemon-growing area, however, citrate of lime has been manufactured, but as far as I am aware, the bulk of this commodity remains unsold. Some of the more prudent growers are preserving their fruit in washed sand or sea-weed (*vide* my Annual Report for 1930 under this head). I am also making this experiment which so far is successful.

Cereals.—As stated above, these crops are inclined to be backward, as apart from dull weather, ploughing and sowing was delayed on account of early and continuous rains.

Nursery Gardens.—The Nursery Garden at Kyrenia is well cared for, and an ever increasing use is being made of it by villagers, for themselves and their school gardens.

The Demonstration Garden at Lapithos has been ploughed recently and looks clean and well kept. There is little doubt that the methodical way in which this garden has been planted, is being followed, as new plantations are laid out in a more orderly fashion, trees being set at regular and well spaced intervals.

Rat Destruction.—This work is being carried out satisfactorily and the original antagonism against the present methods employed, is gradually decreasing. The villagers are more willing to assist the officers in charge of this work and on the whole good results have been obtained.

The Rat Destruction Supervisor visits the District twice a month and keeps me well informed as to the progress of the work; the Rat Destruction officers at the same time keep me posted as to their movements. An additional Rat Destruction Officer has been appointed to the District and rat infested areas will thus be treated more frequently.

Wine Lees for Export.

SOME attention has recently been given by the Department of Agriculture to the question of marketing of wine lees.

It is estimated some 500 tons of wine lees are produced annually and except for small quantities exported by the big wineries little attempt is made to utilize this product as a marketable commodity.

The price of lees is usually determined by the percentage of tartaric acid which it contains. The market for this product is fairly steady. A recent quotation of £17 per ton less $1\frac{1}{4}$ per cent. discount on a 30 per cent. tartaric acid basis c.i.f. London has been received. At this price it will be observed that the value of this by-product represents a value of some £8,500 to the wine industry.

Cyprus wine lees may be classified in to two groups as follows :—

- (a) Wine lees produced by the wineries.
- (b) Wine lees produced by the villagers.

A sample of lees from each of the above sources was prepared and sent to the Trade Commissioner for Cyprus in London for examination and report by a commercial firm interested in handling this product.

The following report on the samples sent is quoted :—

"I have received two samples of lees from Cyprus which I find give the following analyses :—

Wine lees of Wine Co. :—				Percentage.
Tartaric acid as bitartrate	..	..	..	33.73
Tartaric acid as calcium tartrate	..	..	..	2.78
Total	..	..	..	36.51
<hr/>				
Lees from the villagers :—				
Tartaric acid as bitartrate	..	..	..	18.52
Tartaric acid as calcium tartrate	..	..	..	7.17
Total	..	..	..	25.69
<hr/>				

The present market price in London is 17s. per cwt. less $1\frac{1}{4}$ per cent. discount on a 30 per cent. tartaric acid basis. Cost and freight to London.

My firm would buy lees at the ruling market price.

I might point out, however, that manufacturers do not like buying lees under 28 per cent. tartaric acid. It looks as though the villagers with a little 'tuning up' could produce a quality better than 25.69 per cent."

It will be noted that there is a great difference in quality between the lees produced by the Wine Company and that of the villagers.

Apart from the question of the methods of wine making practised by the winery as compared with those followed by the villagers, which may have some bearing on the rate of calcium tartrate to bitartrate and the total quantity of tartaric acid produced, there are two very important factors to observe if wine lees with a high percentage of tartaric acid is to be produced.

These factors are :—

- (a) Early and careful drying ;
- (b) Proper storage.

At the wineries the lees are dried as early as possible in proper drying places and careful attention is given to the storage, whereas in the villages drying is usually done too late, little care is given during drying and practically no attention after drying. Fermentation sets in after late drying and a large percentage of tartaric acid is lost.

With normal care and attention given to extracting, drying and keeping there is no reason why the villagers could not produce marketable lees with a tartaric acid content to meet the demands of the trade.

The following recommendations on methods of extracting, drying and storing of lees have been made by the Viticulturist and Wine Expert.

Separation of the lees from the wine usually takes place in Cyprus towards the end of October or beginning of November. The liquid first obtained should be set aside in a place which must be scrupulously clean. A cask or jar is often used for this purpose which receptacle if used is sulphured as when used for making wine.

The thick lees settles down after 12 hours or so and the clear wine which collects on the surface should be taken off. The residue is then filled into thick sacks and subjected to a slight pressure in an ordinary wine press for a period of 30 to 40 hours. By this time all the remaining liquid will be removed and a compact paste obtained. This paste is cut into pieces for drying.

Climatic conditions in November are still suitable for drying but if it so happens that drying cannot take place until the spring the lees should be placed in a cask or jar. Any exposed surface must be well protected from contact with the air. This protection can be done by placing a layer of straw over the exposed surface with a covering of 6 to 8 inches of earth on top of the straw.

On account of the liability to fermentation the process of desiccation is a very delicate one and great care should be taken during drying.

Desiccation takes place on exposure to the sun and air when the lees is spread over a clean surface, preferably wooden boards. Drying can also be done by placing in an oven.

Before storing it should be made certain that the lees are absolutely dry. Lees should not be stored in a cellar, nor placed in sacks or in heaps during storage for a long time. They should be kept in a dry place in a well ventilated airy room and stored in thin layers preferably on a wooden floor or boards.

Well conditioned lees are reddish in colour with a fresh appearance.

Arbor Day Celebration, 1931.

By Chief Clerk, Forest Department.

ARBOR DAY was celebrated in 1931 in the various villages. The ceremony was carried out by the schoolmasters, scholars, and others on the 30th January for Greek schools and on the 6th February for Turkish schools, as fixed by the Director of Agriculture.

18,023 persons as well as 142 officials of the Forest, Agricultural and Education Departments attended the celebration in 146 villages.

The number of plants issued to the school children and planted by them was 49,247 as follows :—

Issued by Forest Department free of charge	7,158
Issued by Agricultural Department	6,417
Issued by school gardens	34,512
Issued by private individuals	1,160
Total	49,247
Forest trees	22,289
Fruit and other trees	26,958
Total	49,247

The subjoined list shows the various species of trees planted :—

FOREST TREES.

Stone Pine— <i>Pinus pinea</i>	..	..	..	1,569
Washingtonia— <i>Washingtonia filifera</i>	..	..	..	37
Monterey Cypress— <i>Cupressus macrocarpa</i>	..	..	..	184
Eastern Cypress— <i>Cupressus sempervirens</i>	..	..	..	15,449
Persian Lilac— <i>Melia azedarach</i>	..	..	..	141
Wattle— <i>Acacia cyanophylla</i>	..	..	..	1,108
Arizona Ash— <i>Fraxinus velutina</i>	..	..	..	72
Forest She Oak— <i>Casuarina quadrivalvis</i>	..	..	..	435
Aleppo Pine— <i>Pinus halepensis</i>	..	..	..	566
Remarkable Pine— <i>Pinus insignis</i>	..	..	..	150
Slated Gum— <i>Eucalyptus tereticornis</i>	..	..	..	807
American Arborvitæ— <i>Thuja occidentalis</i>	..	..	..	348
Sebesten Tree— <i>Cordia mixa</i>	..	..	..	120
Green Ebony— <i>Jacaranda mimosæfolia</i>	..	..	..	3
Albizia—Various species <i>Lophantha</i>	..	..	..	70
Hedge Plant— <i>Licium varvarum</i>	..	..	..	44
Dodonea— <i>Dodonea viscosa</i>	..	..	..	838
Tree of Heaven— <i>Ailanthus glandulosa</i>	..	..	..	48
Callitris— <i>Callitris quadrivalvis</i>	..	..	..	50
Judas Tree— <i>Cercis siliquastrum</i>	..	..	..	170
Mahogany Gum— <i>Eucalyptus resinifera</i>	..	..	..	10
Flame of the Forest— <i>Poinciana regia</i>	..	..	..	9
Cassia— <i>Cassia fistula</i>	..	..	..	19
False Acacia— <i>Robina pseudo-acacia</i>	..	..	..	14
Sycamore— <i>Acer pseudo-platanus</i>	..	..	..	13
Bramble— <i>Robus ulmifolius</i>	..	..	..	12
Farnesia Acacia— <i>Acacia farnesiana</i>	..	..	..	1
Cyprus Cedar— <i>Cedrus brevifolia</i>	..	..	..	2
Total	..	..	..	22,289

FRUIT AND OTHER TREES.

Almonds— <i>Amygdalus communis</i>	..	..	..	6,498
Figs— <i>Ficus carica</i>	..	..	..	750
Mulberry— <i>Morus alba</i>	..	..	..	9,034
Walnut— <i>Juglans regia</i>	..	..	..	859
Rose various— <i>Rosa spp.</i>	..	..	..	190
Apricots— <i>Prunus Armeniaca</i>	..	..	..	3,227
Carob— <i>Ceratonia siliqua</i>	..	..	..	300
Pears— <i>Pyrus communis</i>	..	..	..	529
Lemon trees— <i>Citrus Limonia</i>	..	..	..	3,208
Pomegranates— <i>Punica granatum</i>	..	..	..	904
Chestnuts— <i>Castanea vulgaris</i>	..	..	..	39
Bitter Orange— <i>Citrus Aurantium</i>	..	..	..	604
Jerusalem Thorn— <i>Parkinsonia aculeata</i>	..	..	..	132
Medlar— <i>Mespilus germanica</i>	..	..	..	5
Machærium— <i>Machærium tipa</i>	..	..	..	50
Cherries— <i>Cerasus avium</i>	..	..	..	11
Orange— <i>Citrus Simensis</i>	..	..	..	54
Apples— <i>Pyrus malus</i>	..	..	..	351
Azerol Hawthorn— <i>Crataegus Azarolus</i>	..	..	..	7
Plums— <i>Prunus domestica</i>	..	..	..	130
Peaches— <i>Prunus persica</i>	..	..	..	76
Total	..	..	..	<u>26,958</u>

Among the forest and fruit trees cypress and mulberry were the most prevalent.

The figures quoted above represent a considerable increase both in the number of trees issued to public and persons attended the celebration when compared with those of previous years.



Rainfall Records taken at Athalassa Stock Farm from 1904-1930.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1904	1.97	.64	1.48	1.32	1.55	.36	—	—	1.98	.99	2.18	3.17	15.64
1905	1.66	2.10	1.19	2.14	1.30	.62	—	.14	—	.21	3.43	2.35	15.25
1906	1.58	2.09	1.41	.82	2.47	—	—	.19	—	—	2.80	2.78	14.14
1907	2.24	.99	1.88	.31	1.80	—	—	—	—	.61	3.60	1.80	13.31
1908	2.28	1.48	3.32	.50	.20	2.52	—	—	—	—	.95	3.00	14.85
1909	2.20	1.44	.82	.57	—	—	—	—	.33	2.59	1.32	.91	10.18
1910	3.25	.34	3.45	.60	1.29	.47	—	—	2.55	1.84	.05	2.75	16.59
1911	4.31	2.51	1.58	.95	1.02	—	—	—	.30	.34	1.28	7.31	19.60
1912	2.16	1.42	1.23	—	.83	—	—	—	—	.26	1.16	3.30	10.36
1913	2.68	3.67	2.46	—	.96	—	—	—	—	1.57	3.06	4.23	18.63
1914	.90	.45	.96	1.19	1.19	.08	—	—	—	.05	1.59	3.47	9.88
1915	.95	.95	1.59	.77	.61	.12	—	—	—	.61	.71	.38	6.69
1916	2.83	2.27	1.09	4.67	.04	—	—	—	—	—	—	2.56	13.46
1917	3.15	1.93	1.20	.58	1.95	—	—	—	—	.26	.87	2.66	12.60
1918	1.55	3.68	1.20	.53	1.13	—	—	—	.70	1.85	1.29	4.14	16.07
1919	4.11	1.74	—	.54	.33	—	—	—	—	.26	.77	3.50	11.25
1920	1.88	2.80	3.54	1.72	3.01	1.16	.19	—	.26	1.65	.32	2.42	18.95
1921	1.52	3.70	.67	.82	.43	1.33	.85	—	—	—	5.01	2.70	17.03
1922	2.08	3.06	.24	—	—	—	.17	—	—	—	2.71	2.70	11.06
1923	1.91	1.89	1.94	.61	2.63	—	—	—	.23	—	.94	1.76	11.91
1924	4.90	.89	.81	—	2.37	—	—	—	—	3.00	3.09	3.04	18.10
1925	2.32	.20	.39	.49	—	.85	.13	—	—	2.05	.46	.69	7.58
1926	6.67	3.86	2.54	1.25	.27	—	—	—	—	—	.78	2.61	17.98
1927	1.34	2.93	1.60	1.70	.82	—	—	.21	—	1.64	.41	.62	11.27
1928	4.06	4.04	.60	.67	—	—	—	—	.90	.43	2.33	1.67	14.70
1929	2.53	4.83	—	.21	—	—	—	.08	—	.33	1.05	5.37	15.42
1930	6.10	3.61	.30	1.42	—	.10	—	—	3.68	.54	1.03	5.39	22.17
Means	2.81	2.29	1.44	0.93	1.01	0.29	0.05	0.02	0.42	0.81	1.69	2.97	14.75



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The Cyprus Agricultural Journal.

A QUARTERLY REVIEW

OF THE

AGRICULTURE, FORESTRY AND TRADE OF CYPRUS.

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EDITORIAL NOTES.

THE threshing season is now drawing to a close and the threshing of cereals is now practically over. The wheat crop is below the average, especially in the hill districts, and the demand for wheat is very poor; at the time of going to press prices have declined to 3s. and 3s. 3cp. per kilé. The production of barley is stated to be much below the average for, owing to the low price of last year, farmers have sown less land to barley than in previous years. The present price of barley is about 2s. the kilé.

* * * * *

The Ministry of Agriculture, Greece, have again sent their representatives (Messrs. Servakis and G. Moussouros) to Cyprus to purchase seed wheat. This is the third year in succession a Mission has come from Greece for this purpose. It is understood the Mission propose to purchase not less than one million okes of wheat, if the quality of the desired varieties is obtainable. Farmers who have made use of power threshing machines and seed cleaning apparatus, stand the best chance of securing a sale for their wheat. It is hoped the Cypriot farmers will give more attention in future to the production of seed wheat in order to meet these demands which are in the interests of the producers and the wheat-growing industry generally.

* * * * *

The Colonial Development Advisory Committee have approved of a grant to the Government of Cyprus of £6,000 from Imperial funds for the Agricultural Department's scheme of agricultural development, concerning which, information was given at the Cereal Conference in 1930 and references made to same on page 4 of the Agricultural Supplement for April, 1930, and page 5 of the Agricultural Supplement for June, 1930. The Director of Agriculture submitted a scheme for agricultural development in March, 1930, which included provision for

power and hand grain cleaning plant, threshers, tractors and power implements and an application was then made for a grant of £26,000. The Cyprus Government was then informed that if the scheme was modified with the view to concentrating on threshing in the first instance a smaller grant would be considered. The scheme was accordingly revised and the application renewed for a grant of £12,000. This has now been reduced, in view of economic difficulties, to £6,000. It is now proposed to purchase, in the first instance, four power threshing outfits, which will be operated on a commercial basis, and be made available for the 1932 threshing season. Further details of the scheme and the threshing charges will be published in due course.

* * * * *

The usual activities which take place annually in the carob-growing areas when the carobs ripen are over again for another year and the crop is now gathered and in store. The production is above the average but prices are very low, opening at 6s. per cantar at the port. The present prices are only £4 and £3 per ton respectively for spot and c.i.f. London. There are still over 12,000 tons of the old crop in the Island for disposal. Farmers in Europe cannot afford to buy cake, even at its present low price, and it is estimated that there is available at the present time about two years' supply of nearly every kind of feeding stuff. The opinion in trade circles in England is that it will be at least another year before there is any revival in the carob trade. Farmers are once more advised to utilize more carobs for feeding to their animals since cattle are more readily disposed of at the present time. The question of converting carobs into alcohol is one that is being investigated by the Department of Agriculture, but nothing can be said as to the practicability of the scheme at present.

* * * * *

It is anticipated that there will be a very satisfactory olive crop this year as it is reported that the attacks of the olive-fly (*Dacus Oleæ*) have been less severe than usual.

* * * * *

There has been an increase in the area planted to water melons this year but unfortunately a considerable amount of damage was done to the crop by insect pests and disease. The great variety of water and musk melons seen in the market this year indicate that growers appreciate the new varieties imported by the Department of Agriculture the last few years.

* * * * *

So far as fruits are concerned, the production of apricots and kaishas was poor and that of cherries very poor. The crop of peaches and plums were good and pears medium. Apples in the

Perapedhi and Kakopetria districts were very abundant though rather badly attacked by the Codlin Moth, but the production at Prodromos was very poor this year owing to an attack of frost. Pomegranates also suffered severely from frost in the early spring.

* * * * *

With regard to nuts, there has been an excellent crop of hazel-nuts but walnuts have been poor in production owing to an attack of frost when the trees were in bloom.

* * * * *

The cotton crop promises to be up to or above the average so far as quantity and quality are concerned but growers are disappointed at the very low price offered and it is feared they will suffer heavy losses on the crop.

* * * * *

The area planted to potatoes for the winter crop is exceptionally large this year as the market has improved and there has been a good demand for seed potatoes from Greece and Egypt.

* * * * *

Owing to the heavy rains and hail storms when the vines were in blossom, and the attacks of Oidium and Peronospora, the yield of grapes is expected to be below the average. Raisin making is now practically over for this season and the vintage is expected to commence as we go to press (September 15th) which is a little later than usual.

* * * * *

A report from Paphos states that, at present, there is little demand for onions on the Egyptian market. The price remains stable at about 12s. per cantar. About 1,000 donums of onions have been planted this year and the general quality is stated to be better than that of last year. Last season's production in the Paphos area amounted to about 9,000 cantars.

* * * * *

With the advent of dry, settled weather conditions during July, further ravages of the Downy Mildew of the Vine (*Plasmopara viticola*) ceased. The disease has appeared sporadically over the whole of the Island, all districts being more or less affected. With the exception, however, of certain well defined areas where conditions were very favourable to the disease, the damage was considerably less than had been anticipated. The general reduction in yield of the crop can be attributed in part to factors other than that of the Downy Mildew. It is, however, desirable to remind growers while the effects of the disease are still fresh in their memories, that should the weather conditions, such as have been experienced this year, be repeated next year, a more serious epidemic may be expected, as the fungus will now be in a dormant condition in many parts of the Island. Growers, therefore, who wish to ensure the safety

of their crops are advised to be in readiness to spray their vines as soon as a primary outbreak is reported. As a precautionary measure, it is advisable that vines that have already been badly attacked this season, and those in the immediate vicinity, should be sprayed early, before the disease actually becomes visible. It is particularly important that this preliminary spraying should be thoroughly carried out and care should be taken to spray the *underside* of the leaves.

* * * * *

The prospects of the orange crop are fairly good and more thought is being given to marketing overseas than formerly. New markets for our citrus crop are constantly being sought by the Agricultural Department and others who have the industry at heart. Recently the possibility of supplying oranges to the Dominion of New Zealand has been, and continues to be explored, in order to find out if that country is likely to prove a remunerative outlet for our citrus fruits.

The desire of New Zealand to encourage inter-Empire trade has given rise to a substantial preference of about 7s. 4d. per case being placed on oranges from Empire sources. This would give Cyprus oranges a great advantage over the Californian "Sunkist" fruit, even though the latter is, at the moment, better known. As most of the Australian surplus is consumed by the end of the year and the Pacific Islands have finished shipping by November, Cyprus oranges shipped so as to reach New Zealand about the New Year or a little later, will probably have only the Californian oranges as competitors, but it must be remembered that this fruit is well known, well advertised, and of excellent quality.

In spite of its comparatively small population of 1,500,000, New Zealand is a very considerable consumer of oranges, and if once Cyprus fruit could become established there in the best markets, and its superiority over the Navels and Valencias of California be demonstrated, a useful export trade might be built up.

Potential exporters should take particular care to make their "packs" as attractive as possible, and to see that none but the highest quality fruit, sound in every respect, is included in a shipment, as the reputation, not only of the one particular exporter, but that of the whole Island, is at stake. It is well known that poor quality fruit has the effect of depressing the entire market, as well as fetching poor prices itself.

The Agricultural Department has details of and will give advice regarding the types of "pack" required for the New Zealand market to compete with the world-famed "Sunkist" oranges of California, over which, however, it must be remembered we have the great advantage of 7s. 4d. per standard case,

It is fairly certain that good prices for Cyprus oranges could be obtained in New Zealand, *if* the fruit carries well. That is the important point. It must be borne in mind that the voyage from Cyprus to New Zealand will be a long and trying one for the oranges, and that good carrying qualities can only be ensured by packing the highest quality fruit with great care, and by careful handling of the fruit from the time it is cut from the trees.

Exporters are reminded that the regulations in respect of oranges (or other fruit) imported into New Zealand, are very exacting. No oranges are allowed entry into the Dominion, unless accompanied by a certificate from the Department of Agriculture in the country of origin stating that no species of fruit fly is known to exist within one mile of the orchard in which the fruit is certified as having been grown. The fruit is examined on arrival by an Inspector of the New Zealand Department of Agriculture and if found free from fruit fly infestation and accompanied by a certificate of origin, as above, is distributed for sale. If any sign of fruit fly is found the fruit may be destroyed.

It has been proved, however, that all premature stages of the fruit fly can be killed by reducing the temperature in refrigerated accommodation on board ship to a certain degree and the Director of Agriculture is in communication with the Department of Agriculture of New Zealand with the view to obtaining accordingly some modification in the regulations referred to in the preceding paragraph.

* * * *

The Cyprus Government has, for the first time, decided to participate in the Salonica Fair and Mr. P. M. Symeonides, Inspector of Agriculture, has been appointed Exhibition Commissioner for Cyprus and Mr. Th. Tavernaris, Secretary of the Cyprus Chamber of Commerce, as Assistant Commissioner. They both sailed from Cyprus for Salonica *via* Piræus and Athens on the 22nd and arrived there on the 30th August. The Exhibition which lasts a fortnight opened on the 13th inst. and from a cable received it is gathered that the Cyprus Exhibit has been very satisfactorily arranged.

* * * *

The Viticulturist and Wine Expert, Mr. P. Antoniadès, has been appointed to represent the Government of Cyprus at the International Conference on Viticulture and Wine which will take place at Rome in October next.

* * * *

The entrance examinations for admission to the Agricultural College will take place on the 22nd and 23rd September in the Lecture Hall of the Department of Agriculture, at Nicosia.

About 150 Greek and 75 Turkish applications for admission have been received up to the end of August for the four and six existing vacancies respectively that occur this year.

* * * * *

The Agricultural Assistant, Chr. Sofianou, who has been in charge of the Nursery Garden, Kelokethara, for some time has been transferred to Yialousa in the place of Agricultural Assistant S. Miltiades, who takes the place of the former at Kelokethara.

* * * * *

The thoroughbred stallion "Plymouth Rock," it is regretted to report, died on the evening of the 15th inst. at the Athalassa Stock Farm. The cause of death was rupture of the diaphragm. "Plymouth Rock" was sent to India when three years old and won many races there, proving himself about the best horse up to a mile ever to race there. He won the Mayfowl Cup, Calcutta and Rs. 71,785 in winnings and place money. He was also a winner in England of six races value £1,663. In the death of "Plymouth Rock" Cyprus has lost a very valuable stud horse.

The Marketing of Cyprus Pomegranates.

SINCE the imposition of a prohibitive tariff against the importation of various kinds of fruits into Egypt, the export trade in pomegranates from Cyprus to Egypt has received a severe blow.

Egypt is practically the only market for Cyprus pomegranates and unless a better price can be paid by Egyptian importers, in supplying the demand which no doubt still exists, Cyprus exporters and growers are likely to suffer heavy losses if they still continue to export to Egypt.

The quantity of pomegranates exported last year, although higher than that of the previous two years, was considerably less in value. The reduced price rendered the trade unprofitable last year and the memory of the considerable losses incurred will make exporters wary in making shipments this year.

The following statement gives an indication of the quantity and value of the export trade in this fruit for the last ten years :—

Year.		Quantity. cwt.		Value. £
1921	..	67,181	..	27,081
1922	..	92,145	..	26,376
1923	..	75,803	..	17,888
1924	..	78,045	..	21,914
1925	..	75,502	..	22,988
1926	..	98,329	..	25,631
1927	..	99,937	..	28,830
1928	..	97,539	..	25,759
1929	..	91,820	..	22,259
1930	..	99,600	..	13,724

Since the imposition of the new Egyptian tariff, an exploration of the possibility of establishing markets elsewhere than Egypt, has been made and all possible avenues for the marketing of either the fresh fruit or the expressed juice have been investigated.

Although the enquiries have not given cause for much optimism up to the present, and the future in regard to the pomegranate export trade can in no way be considered encouraging, the enquiries which have been made have at least sustained hope and the investigations made may yet lead to important developments.

The following is a brief resumé of the position in regard to the market for pomegranates and pomegranate juice in the countries in which enquiries have been made:—

Canada does not offer any great possibilities for a market for the pomegranate fruit or the juice. The main sources of supply are the United States of America and British West Indies and the total value of the imports into Canada for the year 1930 was only 15,854 dollars. No definite information has been obtained as regards Canadian requirements for the juice.

The importation into the United States of America of pomegranate fruit is prohibited from all sources but this prohibition does not apply to pomegranate juice.

Pomegranates are grown and consumed in California, but pomegranate juice does not appear to be used to any considerable extent. A high class foodstuffs importing firm of New York has expressed interest and there are possibilities of developing trade in pomegranate juice for the manufacture of fruit syrups and extracts. Arrangements are in hand to forward samples for examination and report.

The prospects of marketing any large quantities of the fruit in the United Kingdom are not very promising. The pomegranate is not a popular fruit in England and the quantities marketed are fairly small. One important Covent Garden firm, however, is fairly hopeful and the following is an extract from a letter written by the firm in question:—

“Replying to your enquiry with reference to Cyprus pomegranates, we would advise you that these should meet a fairly good market here, if up to the standard of those which we received last year, and provided they could be exported so as to arrive between September and mid-October, as after that period the demand is practically non-existent.

They should be packed in counts of 120, 160, 200, 240 fruits to the case, as these are the recognized counts adopted by the Murcia exporters, and the packing material used should not be such as to generate too much heat. We would suggest wood shavings as the most suitable medium.

Provided the above recommendations are adhered to, we are of the opinion that the average selling price would range from 9s. to 10s. per case."

There is no demand in England for the juice at present although several firms have asked for samples, quotations, etc.

The demand for fresh fruit in France is practically nil, the small quantities consumed being either grown in the south of France or imported from Spain.

France was looked upon as a possible potential market for the juice, but it has been ascertained that the sirop grenadine, in spite of its name, does not contain any extract of pomegranate and manufacturers do not use pomegranate juice, to any great extent, in the manufacture of fruit essences for sirops in France.

The difficulties of transportation prohibit the sale of Cyprus pomegranates in the Sudan on a commercial scale and there is also a considerable supply of locally-grown fruits.

In Sweden, Denmark and Norway, pomegranates are very little known. It is unlikely that any interest would be created in taking supplies of the fruit or the juice by these countries in any quantities at least.

Local business concerns interested in the expression of fruit juices have made enquiries regarding a suitable plant for expressing pomegranate juice and for information as to prospects of marketing the juice.

Before going to the expense of importing special plant for the extraction of pomegranate juice, it is necessary to investigate further the possibilities of a market. It should also be noted that the extraction of pomegranate juice is not so simple a matter as that of extracting juices from citrus fruits. Great care has to be taken to avoid admixture of the rind juice and pith which contain tannin and have a bitter taste.

Nevertheless the possibilities in America and the United Kingdom of marketing pomegranate juice are worthy of close consideration and if the investigations being followed up prove that Cyprus pomegranate juice is suitable for these markets, in all respects as regards quality and price, then the introduction of a suitable plant would be justified.

The Department of Agriculture is indebted to the Trade Commissioner for Cyprus in London, the Imperial Institute, the Department of Overseas Trade, the Consul-General, Marseilles, the Canadian Government Trade Commissioner, Egypt, and the Commercial Intelligence Branch, Sudan Government, for much valuable information given in reply to enquiries addressed to them on the question of the marketing of pomegranates and juice.

The White Root Rot of Fruit Trees.

THE White Root Rot of fruit trees, caused by the fungus *Rosellinia necatrix*, is one of the most destructive diseases with which the fruit-grower and viticulturist have to contend. Not only does it cause the death of trees of all ages but when once established can only be eradicated with extreme difficulty. It has long been known on the Continent of Europe, where it was first studied and described by Hartig in 1883 ; here it is a cause of serious loss to vine-growers among whom it is generally known as the "Pourridie." The fungus is capable of attacking many varieties of plants ; the vine, apple, cherry, chestnut, peach, plum, privet, potatoes and some annual plants are among its victims. In Cyprus it appears to be particularly destructive to young seedling fruit trees in the nursery but mature trees are by no means immune from attack.

SYMPTOMS OF THE DISEASE.

The "White Root Rot" fungus being a soil organism can only attack the underground parts of the tree whose death is brought about by the destruction of the root system. Where mature trees are affected, two or three seasons may elapse before the tree dies. The earliest signs of attack are seen in the premature yellowing and fall of the leaves. The tree makes little or no growth and has a half starved appearance. Die-back of one or more of the main branches is frequently evident. In the case of deciduous fruit trees the symptoms may be associated with a heavy blossom and fruit set which, however, is frequently undersized and may fall prematurely. These are the usual symptoms associated with a restricted root action. Death of the tree may occur in the second or third year of attack. When seedlings are attacked the death of the tree occurs much more rapidly ; the fungus quickly destroys the fibrous root system causing a sudden wilting and drying up of the foliage.



Fig. 1.—Portion of root attacked by *Rosellinia necatrix* showing the characteristically shaped fungus tissue enveloping the surface. (After Hartig from Viala.)

An examination of the finer roots of a dead tree shows that most of the finer roots have disappeared. The older main roots are covered with a dirty-white to greenish-grey web or mat of fungus threads (mycelium) which develop into short string-like strands or ribbons which at their extremities frequently spread out into small fan-shaped structures. (See fig. 1.) If the tree has been dead some time the enveloping web of mycelium is no longer seen; the surface of the root presents a characteristic dull appearance and is dotted over with a number of small black bodies known as sclerotia. When the trees are in an advanced stage of attack a white sheet of fungus tissue is seen when the bark is stripped from the main roots and collar of the tree. (See fig. 2.) The appearance of the young roots in the early stages of attack is very characteristic and serves to distinguish this disease from other root rots which attack only the main roots and collar. Immediately on exposure the ends of the fine roots are seen to be invested with a white fluffy growth of mycelium. This portion of the fine roots is soft and rotten while the portion immediately above is quite healthy. (See fig. 3.)



Fig 2.—Portion of main root attacked by *Rosellinia necatrix* showing the white of fungus tissue below the bark. (After Nattrass.)

LIFE HISTORY OF THE FUNGUS.

As far as is known this fungus is not propagated by spores (seeds) as is the case with most other parasitic fungi. The fungus lives entirely below soil level and the fine fungus threads ramify through the soil in all directions from an infected tree. To a certain extent they are capable of living on dead vegetable matter in the soil until they come into contact with the living roots of another susceptible plant. For this reason the trees

in the immediate vicinity of a tree killed by *Rosellinia necatrix* generally show signs of being attacked. As the fungus progresses the finer roots are gradually destroyed, the fungus then working its way into the main roots and finally invading the tissue at the base of the main stem. The disease appears to be of sporadic occurrence; the exact conditions under which it becomes serious are not known. There is no doubt that old roots from a tree killed by the fungus can act as a source of infection even after a lapse of considerable time. The black sclerotial bodies represent the resting stage of the fungus and eventually produce the fine white mycelium which ramifies through the soil in search of a fresh victim.



Fig. 3. Portion of root system of young tree showing early attack by *Rosellinia necatrix*. (After Nattrass.)

CONTROL MEASURES.

Direct measures are of little value in controlling this disease. It is known to flourish in badly drained sites and attention to drainage may do much to mitigate the severity of the attack. Trees which have been killed by the disease should be uprooted and as much of the diseased root system as possible removed and destroyed. Trees in the immediate vicinity should also be examined for signs of attack. These, if affected, should also be removed. Young trees can sometimes be saved, if slightly attacked, by pruning off the diseased roots and planting the trees in healthy soil. After the dead tree has been removed the soil may be treated with a mixture of lime and sulphur in the proportion of half lime and half sulphur. Other substances which give good results are carbon bisulphide and copper sulphate, but these should only be employed under the direction of an expert. Trees should not be planted in the ground from which a diseased tree has been removed except after an interval

of two or more years following suitable soil treatment. Where several valuable trees are likely to be attacked the diseased area can be isolated by enclosing it with a narrow trench two feet deep and one foot wide. An area from which trees have been removed may be used for vegetable culture, as the intensive culture would tend to destroy the fungus in the soil. Where a considerable area of fruit trees has been destroyed the ground might be planted up with citrus trees which are not known to be attacked by the disease.

The symptoms of the disease resemble those caused by some other root diseases and early recognition is important. Growers who suspect the presence of the disease should not hesitate to obtain the opinion of an expert.

Salt for Farm Animals.

SALT in the correct proportions is necessary for all classes of stock, and farmers who want their animals to thrive should see that a supply in one form or another is provided. The old method of supplying salt to cattle at grass was to place lumps of rock salt on the pastures so that the animals could have a lick when they wanted one. This licking method, by means of which animals can get what they want at will, is probably the best, and is still practised on many farms throughout the country.

In this way the animals satisfy their own needs and do not take more than is necessary for them. On the other hand, those deprived of a sufficient supply will keep on taking it long after they have had enough for the time being and do themselves harm, just as is the case with an animal that is over-thirsty.

Another method of supplying salt is by adding it to the rations, cattle requiring daily quantities: calf, 1 oz.; yearling, 3 oz.; cows in milk, 4 oz.; fattening steers, 6 oz.; sheep, 1 to 2 oz. a week; pigs, not more than $\frac{3}{4}$ oz. per day for animals of fair size and less for smaller ones. Care must be taken not to give pigs too much, as it soon harms them, and the quantities stated should not be exceeded. Horses require about 2 oz. daily.

The more modern method is to supply prepared salts of one kind or another purchased from the agricultural merchant. Probably the best and most popular form is iodised blood salt. This contains iodine and mineral salts in correct proportions.

Salt prevents disease, and by aiding digestion at every stage maintains animals in what is known as condition.

(Extract from *Live Stock Journal*, Vol. CXIV, No. 2988.)

The Smut Disease of Maize.

IN various parts of the Island the Smut Disease of Maize has made its appearance during the present season. This is one of the most remarkable of the diseases caused by the "Smut" fungi, on account of the striking appearance of the enormous swellings or tumours which may appear on any part of the growing plant. These tumours are the fructifications of the fungus and are analogous to the more familiar smutted ears of barley, wheat and oats. The first tumours are seen on the leaves when the plant is a little over a foot or more high. These are usually small and are at first covered with a grayish membrane. As the plant grows, further tumours appear, especially at the junction of the leaf sheath and blade and at the stem nodes, where they may reach a large size, several inches in diameter. On the tassel small pustules are often formed, but the organ most frequently attacked is the female inflorescence or cob.

When the tumours reach maturity the covering envelope bursts exposing the black spore mass within. These spores are released in enormous numbers and, if blown directly on to a neighbouring maize plant, can cause infection, but the possibility of infection is greatly increased by the power the spores have of germinating on any nutritive medium such as damp rich soil and manure. Here each spore produces a short tube from which an immense number of smaller spores or sporidia are given off, with the result that myriads are formed and are readily distributed by wind on to healthy maize plants. Here they can start the disease on any part of the plant that they reach.

The disease is likely to be more abundant during a moist season which facilitates the production and dissemination of the sporidia. Exceptionally vigorous soft growth induced by high fertility and abundant watering greatly facilitates infection.

The chief loss occurs when the cobs are affected; in the case of plants grown for fodder the actual damage is slight owing to the localized infection. It is, however, a great mistake to feed smutted plants to stock, since the spores can pass uninjured through the alimentary canal and produce myriads of sporidia on the manure heap and on the land. This is particularly undesirable where the cattle are tethered out in the field. In this connection it may be mentioned that cattle are very fond of eating the smutted ears, but to allow them to do so only facilitates the spread of the disease.

It is not possible, as is the case with certain other smut diseases which only enter the plant in the seedling stage, to protect the plant from infection by treating the seed with a disinfectant. The only means of control consist of cutting out the affected plants or parts before the enclosing membrane

bursts. These should be burnt. It is also advisable to select seed only from clean crops as the seed may occasionally carry some of the spores.



Effect of the disease on the cob, showing deformity and formation of large gall. The enclosing membrane has burst and the black spores are being liberated.

Small tumour developing on stem.

Market-Gardening Round Prodromos.

By H. CAMPBELL, M.C.

MUCH of the irrigated land round Prodromos is devoted to the production of apples, cherries and summer vegetables, such as peas and beans ; and with the increasing number of summer visitors this industry ought to become more and more prosperous. Unfortunately, except in the matter of weekly irrigation, the villagers treat their gardens very much as they would treat agricultural land given up to vines or cereals, the result being that their crops are meagre and, as it seems to me, they expend an inordinate amount of needless labour in getting anything at all.

There is all the difference in the world between the working of agricultural land and gardening. In agriculture one is dealing with a large area of ground and cannot give close attention to its cultivation ; but all gardening should be intensive—one takes quite a small area and, by careful handling, makes it produce ten or twenty times the crop that agricultural land could carry. Consider the market-gardens in France, where the people have brought intensive cultivation to a high art. So fertile are these gardens that the upper four inches (ten centimetres) of the soil is called “golden”—not on account of its appearance, for it is nearly black in colour, but because of its value ; and it is recognized by French Law that, when a man sells a market-garden or terminates the lease of one he rents, he has the right to carry away with him this “golden” soil. Would anyone go to the trouble of carrying away the top soil of these Cyprus gardens ?

The fact is, these Cyprus market-gardens do not contain garden soil at all, but merely agricultural soil ; and for the most part it consists of practically unaltered clay, which is notoriously unfertile. Yet clay, if properly worked, can be turned into the very richest kind of soil. Moreover, it is rich in potash, which is the most expensive constituent of artificial fertilizers ; but plants cannot make use of this valuable stuff while it remains unaltered in the clay. It is obvious, therefore, that Cyprus gardeners are not getting full value out of their soil, and it behoves us to see what we can do to improve matters.

True garden-soil is almost black in colour, due to the presence of organic matter, such as decayed leaves and natural manure ; and plants cannot thrive well unless there is plenty of this organic matter present. For their well-being depends on the soil-bacteria, which themselves need organic matter. In addition, the bacteria require plenty of fresh air, and if the soil consists merely of clay, fresh air cannot penetrate below the surface ; whereas organic matter (or humus, as it is called) forms a film round

every particle of broken up clay, preventing these particles from running together and forming a solid cake. Thus, by adding humus and breaking up the clay, we leave crevices between the lumps, through which the air can penetrate freely. Incidentally, too, we enable water to percolate deep into the ground and lie there ; whereas, with a pure clay soil, the water has to remain at the surface, where it is quickly evaporated by the sun and so most of it is wasted.

Naturally the largest number of bacteria will always be found near the surface, where most air is obtainable; and it is here, indeed, where they are most needed. For seeds are sown there, and the delicate young seedling plants require every help. Our first object, then, in improving the soil, must be to bring the surface into a high state of fertility. Now, as I have pointed out, by adding humus and breaking up the clay, we render it porous, and every time we work it over, we make the clay-lumps smaller and smaller, until at last each particle becomes like sand—and it can never get together in lumps again, being prevented by the humus. But if we also dig in a little lime, this actually alters the nature of the clay (provided there is also humus present), destroying all vestiges of stickiness and releasing the potash. Thus, by forking over the surface-soil three or four times with manure and lime, we can quite easily render it porous and make it a suitable breeding-ground for the bacteria.

The peasant will, no doubt, say that he cannot afford the cost of natural manure and lime. But he can afford two or three shillings a year and treat a small part of his garden in this way every year. Moreover, although a little manure is necessary at the outset, in order to separate the clay permanently into lumps, he can introduce humus cheaply in another way. Let him sow some rank-growing crop like mustard and dig it under before it flowers. This will very quickly decay and be quite as valuable as manure. If he does this in March, he can follow it up with a crop of peas or beans in May or June ; and if the waste-products of these (pods, leaves and stalks) are dug in, in the autumn, more humus will be formed—and humus very rich in nitrates. By the following spring, when he digs the ground over once more with a view to sowing, he will find that his surface soil is of a rich brown colour, just as if he had used large quantities of manure to begin with. But let him not now rest content. Year by year he can increase its richness by means of mustard, without interfering with his marketable crops. But here I would offer a suggestion. Having released the potash from the clay, he need not worry further about this ; and since peas and beans take up nitrogen from the air, he can, by digging in their waste-products, add to the soil all the nitrate that it required. The only plant-food he is not introducing is phosphate.

Now, phosphate is the *cheapest* constituent of artificial fertilizers. Let him, then, buy this and scatter it thinly on the ground every second year before sowing his mustard. A few piastres will pay for all that is required for quite a large garden; and the mustard will take it up and, when dug under, will leave it ready for the use of the more valuable crops that are to follow.

I have said that the clay must be well broken up by frequent digging and turning over; and I had very good proof of this last July when starting to get into good condition the soil of my own small piece of land at Prodomos. I added lime and manure and dug the ground once, planting mustard seed; but hardly any seeds germinated. After digging it a second time and re-sowing, some of the seeds came up; but it was a patchy crop. So I tried a third digging and sowed once more, when the seeds all came up freely. It is obvious that, after two diggings, there remained a certain amount of clay not fully separated by the humus into small particles, and so, when I watered, this free clay managed to form a hard film round the seeds. But it is equally obvious that, as a result of *three* diggings, the surface-soil has been made definitely fertile; for mustard is rather a cold-weather crop and does not greatly thrive under the hot sun of the Cyprus summer. Yet in this case it grew as freely as it would do in the spring and autumn.

And another point to observe is this: Having used an English garden fork in digging, I have completely altered the texture of the upper eight inches of my soil. It can henceforth be turned over without any of the expenditure of labour one has to give to the digging of clay, and it can never again form into a hard bed, but remains porous. Any water, therefore, that falls on it will sink down, instead of flowing straight off the surface; and it will lie above the unbroken clay below, where it will be little affected by evaporation. Clearly, then, there will be far less necessity for me to irrigate my land during the dry weather of next summer.

But though my surface-soil is now in good condition, there is more to be done before I can hope to get the best return for my labour; and in my next article I will explain how the process should be continued.



EDITORIAL AND ADVERTISEMENT NOTICES.

All communications for publication should be addressed to the Editor *Cyprus Agricultural Journal*, Department of Agriculture, Nicosia.

Communications are invited, written on one side of the paper only. It should be understood that no contributions or specimens can be returned unless postage is prepaid.

Copies of the *Cyprus Agricultural Journal* can be obtained on application to the District Commissioners, or to the Department of Agriculture, price 3cp. per number, or by post 3½cp.

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The "*Cyprus Agricultural Journal*" is published in March, June, September and December.

The Editor does not necessarily endorse the statements or opinions expressed in contributed articles, the responsibility for which rests with the authors.

The Mulberry Tree and Silkworm Rearing.

By S. PONTIKIS, *Sericultural Inspector.*

A GOOD cocoon crop depends not only on the careful rearing of silkworms but on the good quality of the mulberry leaves too. Silkworms reared on good, healthy and robust leaves, produce heavier and better quality cocoons, but to have good leaves one must maintain good trees, well cultivated and well pruned. Cultivation and treatment of the mulberry tree results in an abundant yield of healthy leaves and in a prolongation of the life of the tree.

No proper silkworm rearing is possible without the existence of good mulberry trees. The cost of rearing depends on the leaves, and when the foliage of our mulberry trees is not rich and thick its collection becomes difficult and costly.

Although the value of the silkworm products has now fallen in the same way that the prices of most other products have fallen, it will certainly improve later on and mulberry tree cultivation will reach again its previous importance.

The Italian Professor V. Sini says, in connection with the use of the mulberry leaves by the silkworms: "Il filugello lavora come mangia" (the silkworm works whilst eating).

I will, therefore, say a few things on the propagation, cultivation, manuring and pruning of the mulberry tree.

Varieties:—There are three varieties of mulberry trees in Cyprus; the wild, the grafted and the black mulberry.

Climate:—The mulberry tree thrives in all places where the vine-plant grows.

Soil:—It thrives on all soils, except the very damp, and prefers the sandy-clay, fertile and humid soils. The light sandy soils are also considered suitable for the mulberry tree because it grows on them very easily and gives a rich foliage. Since our object in cultivating the mulberry tree is to obtain leaves, the soil on which we plant it must be rich in organic substances and properly manured and fertilized.

Propagation:—The best method is by sowing.

Collection of seed:—Robust trees are produced from good seeds. The seed must not be old, and must come from robust, healthy young trees. The berries from which we will get the seed must be fully mature. The seed is separated from the berries in the following manner: We put the berries in a petroleum tin, pour water over them and stir until the gluey substance which contains the seed is liquefied. The healthy seeds then go to the bottom of the tin from where they are collected, washed twice or thrice and spread in the shade to dry.

The seed is sown either in July-August or in spring. When it is to be kept until spring time, it must be stored in a dry well-ventilated place, in small quantities.

The beds in which the seed will be sown must be well manured and deeply cultivated, so that the manure may be properly mixed with the soil.

Sowing :—The sowing can either be made in lines or broad cast. It is preferable in lines because then the ventilation, irrigation and weeding can be done more easily.

If the seed has been sown in July-August, we will have in spring, the seedlings which can be planted in lines, one foot away from each other, the same distance being also kept between each plant. At the planting we cut a little of the root of the seedling as well as part of its stem, leaving only two buds above the surface of the ground. During summer the plots are irrigated, weeded, hoed and the plants reach the height that makes them suitable for planting in their permanent positions.

Grafting :—The grafting is done either at the time that the plants are in the nurseries or after they have been planted in their permanent positions ; it is done by budding, as this method is more practical than the others.

The grafted mulberry requires deep soil, cultivation, manuring, pruning, irrigation, before it gives a good crop of leaves, otherwise it is preferable to remain ungrafted because in this state it can thrive on poor soils.

Planting :—The method of planting is similar to that of the other trees. For economic reasons planting can be limited to the edges of the fields, *i.e.*, to places which are not used for other plants.

Cultivation and Manuring :—This tree does not require too much cultivation. The trenching and manuring in November and the filling up of the trenches in March can maintain it in a good condition, irrigation helps greatly the growth of the mulberry tree. For manuring we can use decayed stable manure, nitrogenous fertilizers and green manure.

Pruning :—The pruning in Cyprus in irrigated areas is done every year by cutting back all the branches of the tree, but in dry areas no pruning is made except every twenty years.

In the case of irrigated areas, more manuring, watering and better cultivation should be given to the mulberry tree, otherwise it does not give healthy leaves, its living period is shortened and is easily attacked by diseases. It is better

to make the pruning in these areas every three years, because then the tree will yield a more abundant and healthy crop, and will live longer. And remember that healthy leaves mean *better quality cocoons*.

In cases of non-irrigated areas pruning should be done every seven or eight years, according to the growth of the tree, when, even if we do not get any leaves for the two years following the pruning, we will get much more and better leaves in the remaining years, which will mean smaller cost of collection and *better quality cocoons*.

Table showing the number of plants issued from the Paphos Nurseries during the last two years :

Year	Nursery	Sold	Issued gratis	Total
1930	Ktima	83	322	405
"	Polis	840	1,854	2,694
"	Kelokethara ..	935	64	999
	Total ..	1,858	2,240	4,098
1931	Ktima	12	1,383	1,395
"	Polis	441	724	1,165
"	Kelokethara ..	558	300	858
	Total ..	1,011	2,407	3,418



Rearing of Silkworms.

Demonstrational Work in Girls' Schools during the School Year 1930-1931.

DEMONSTRATIONAL work in the rearing of silkworms was again carried out in girls' schools during the school year 1930-1931 under the supervision of the Government Sericultural Inspectors and silkworm seed was issued gratis by the Department of Agriculture. One hundred and ninety girls' schools, in representative parts of the Island, participated in this work, of which 135 were Greek-Christian schools and 55 were Moslem schools.

In all, 2,558 school girls (1,987 Greek-Christian and 571 Moslems) attended the demonstrations and much useful and practical sericultural knowledge was gained by the girls.

Each school taking part in the demonstrations was supplied with the necessary equipment consisting of one wooden incubator, one thermometer, wire layers and other necessary fittings. The cost of this equipment was borne by the village school committees as arranged by the Department of Education.

In villages where a suitable room for silkworm rearing is available and where there is a sufficient supply of mulberry leaves, every effort is made to give the schoolmistresses encouragement to instruct the school girls in proper methods of silkworm rearing.

There was keen competition amongst schoolmistresses for the prizes offered by the Department of Agriculture for the best results obtained in production, based on the quantity of cocoons per dram of silkworm seed used.

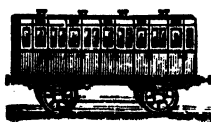
The results obtained during the school year 1930-1931, were exceptionally good for Cyprus.

In 3 schools the production of fresh cocoons was over 9 okes per dram or 73 to 77 okes per ounce of seed, in 21 schools 8 to 9 okes per dram or 64 to 72 okes per ounce, in 33 schools 7 to 8 okes per dram or 56 to 64 okes per ounce, in 57 schools 6 to 7 okes per dram or 48 to 56 okes per ounce, in 38 schools 5 to 6 okes per dram or 40 to 48 okes per ounce, while in 18 schools it varied between 4 to 5 okes per dram or 32 to 40 okes per ounce. In the remaining 19 schools the production was below 4 okes per dram or 32 okes per ounce; this was due to various unavoidable causes or misfortunes but nevertheless the production was in no case lower than 24 okes per ounce which is higher than the average quantity of cocoons produced per ounce by the villagers,

This high production should serve as a demonstration to the villagers that the yield of cocoons does not depend so much upon the quantity of silkworm seed used but rather upon the care and common-sense methods followed in the rearing of the silkworms.

The following were the prizes awarded by the Department of Agriculture :—

Name of Schoolmistress	Residence	Prize
		£ s. cp.
Miss Mehtie Ibrahim	Ay. Andronikos	1st 4 0 0
Miss Chrystalleni Constantinou	Polis	2nd 2 10 0
Miss Niovi Ch. Papadopoulou	Kritou Terra	3rd 2 5 0
Miss Ioulia Voreadou	Mazotos	4th 2 0 0
Miss Anastassia Michaelidou	} Rizokarpaso	5th 1 15 0
Miss Eftychia Demetriou		
Miss Ifighenia Marathovounioti		
Miss Maria Lazaridou		
Miss Megil Omer	} Kyrenia	6th 1 15 0
Miss Fikrie Hussein		
Miss Ioulia Constantinou	Kalopanayiotis	7th 1 15 0
Miss Maria Vassiliou	Ay. Andronikos	8th 1 10 0
Miss Seide Nikiar	Ktima	9th 1 10 0
Miss Ioanna S. Kolokasidou	} Kalavaso	10th 1 10 0
Miss Antigoni Vovidou		
Miss Rouhsar Hussein	Kazaphani	11th 1 10 0
Miss Selma Mehmet	Sinta	12th 1 5 0
Miss Zishan Mehmet	Piyi	13th 1 5 0
Miss Servet Omer	Kato Arodhes	14th 1 5 0
Miss Maria Skotti	Kontea	15th 1 5 0
Miss Angeliki Benardi	Pervolia	16th 1 0 0
Miss Leman Sherif	Tokhni	17th 1 0 0
Miss Eleni Christoforou	Varosha (2nd)	18th 1 0 0
Miss Muride Moustafa	Vassilia	19th 1 0 0
Miss Chystalleni Georgiadou	} Karavas	20th 1 0 0
Miss Eleni K. Theocharidou		
Miss Athina K. Pissaridou	} Neokhorion	21st 1 0 0
Miss Erato Savvidou		
Miss Hattije Nevber	Alektora	22nd 1 0 0
Miss Efrossyni Antoniadou	} Ay. Omoloyitades	23rd 1 0 0
Miss Themis Christou		



Cyprus Agricultural College, Nicosia.

ANNUAL REPORT FOR THE COLLEGE YEAR 1930-1931.

THERE were 20 Greek and 7 Moslem students enrolled during the year as follows :—

				Greek.	Moslem.
1st year's course	..	..		10	—
2nd " "	..	..		6	2
3rd " "	..	..		4	5
				—	—
Total	..	..	..	20	7
				—	—

The following were the results of the annual examinations :—

1st year's students who have qualified for the second year's course :—

Names.				Total average mark out of 100.
1. Christos Neophytou	..	..	..	87.97
2. Chrysostomos Papasolomondos	..	..	..	83.77
3. Epaminondas Avraam	..	..	..	83.10
4. Evangelos Iacovou	..	..	..	80.97
5. Minas Photiou	..	..	..	78.20
6. Neoptolemos Apostolides	..	..	..	78.12

2nd year's students who have qualified for the 3rd year's course :—

1. Costas Patsalides	..	..	..	86.92
2. Kyriakos Agathodorou	..	..	..	83.68
3. Antonios Papacharalambous	..	..	..	86.03
4. Christos Papadopoulos	..	..	..	83.85
5. Mustafa Vehbi	..	..	..	91.15
6. Hussein Vehid	..	..	..	92.23

The following students passed the third year's final examination and have received the College Certificate as provided for in the Syllabus of the College :—

1. Hassan Djinkiz	..	..	..	93.45
2. Hussein Djinkiz	..	..	..	88.34
3. Osman Djemal	..	..	..	85.76
4. Seit Ahmet	..	..	..	83.46
5. Mehmet Irfan	..	..	..	79.95
6. Aristides Petrou	..	..	..	88.08

The services of Mr. Ieronymou as an additional Lecturer have facilitated greatly the lecturing and practical work of the College.

The following special excursions were made :—

LEFKA.—During the orange export season when demonstrations in the packing of oranges were given.

SAITTA.—*Experimental Vineyard*.—Special instruction in vine pruning was given.

PERAPEDHI AND MALLIA.—Special excursion to the wineries.

During the above and other excursions botanical collections were made by the students.

The Cyprus Agricultural Journal.

A QUARTERLY REVIEW

OF THE

AGRICULTURE, FORESTRY AND TRADE OF CYPRUS.

Vol. XXVI., Part 4.

DECEMBER, 1931.

Price 3cp.

EDITORIAL NOTES.

THE lateness of the rains this season is causing great anxiety to the farmers. As far as crops are concerned, if favourable rains come early in January and continue evenly distributed during the spring, there are prospects yet for good crops in 1932. It is very infrequent that the rains are so long delayed in Cyprus, and as far as authentic information can be gathered from meteorological and other reports, it is found that only on five occasions during the last 75 years rains have been exceptionally late as in the present year. In 1856 it was not until the end of December before rains came, while in the following year 1857 they were delayed until Christmas Day. In the 1874 rainy season there were no rains until the 7th January of the following year. In 1913 the 25th December saw the first of the rains and in the 1925-26 season they were as late as the 6th January, 1926.

During all the rainy seasons above-mentioned, there were ample and well distributed rains in the spring, and production during the year was good. It is now to be hoped that the 1932 production will be favoured in the same way.

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The prolonged drought has had a very deleterious effect on the condition of sheep and goats in all parts of the Colony. It will be several months before the flocks will overcome the debility and heavy parasitic invasion which have resulted from lack of sufficient food. Apart from the heavy mortality, which in many areas has been very serious, the loss in production of the survivors will be severely felt throughout the coming spring. Goats appear to have suffered more than sheep—this may in part be due to the fact that (as a result of advice and the experiences of a similar year in 1926) more attention is being paid to the hand-feeding of sheep. The general shortage of barley and the sudden increase in its price have seriously checked the growing tendency to hand-feed during the autumn and winter.

Abortion has already been rife in many areas. Lambs and kids born at full time do not obtain sufficient milk from their debilitated mothers and in some areas a large proportion of these young animals are dying soon after birth. These losses, together with the loss of production of milk, meat and wool, can only be checked by good hand-feeding (which most flock-owners cannot see their way to afford) and by regular treatment for worm parasites with the medicines issued free of charge by the Veterinary Service.

* * * *

The dry weather, accompanied by strong cold winds, will possibly have an adverse effect on the carob production next year.

* * * *

Although with the absence of the autumn rains the usual crop of mushrooms has not yet appeared, they may do so if mild wet weather ensues. It should be remembered that several deaths occurred last season through eating poisonous mushrooms and that the utmost care should be taken in selecting those for culinary purposes.

* * * *

Variety trials with imported and local varieties of wheat, barley and oats, which hitherto have been carried out at Kykko Metochi, are this year being conducted on the lands purchased at Morphou for the proposed Central Experiment Farm. Two hundred donums will be sown with cereals, particularly wheat varieties for trial and selection of seed for ultimate distribution to farmers.

* * * *

The depression, which has so heavily weighed on the flax and hemp industry of Cyprus for some time past, now appears to be giving way to a brighter outlook. Prices for fibre and seed are still far from what they should be, at least from the farmers' point of view, but demand is good and, where Cyprus is concerned, much in advance of supplies.

All the stocks of fibre have now been sold and the year concluded with the shipment of a consignment of 15 tons fibre and tow from Paphos. It is encouraging to note that this demand emanates from Belfast.

There is also a considerable activity on the market for Cyprus linseed. Prices have risen accordingly, and some speculative buying has taken place. The rise in local prices is nearly 1cp. per oke since August, and there is quite a marked shortage of seed for sowing purposes.

The demand for flax seed on loan was very keen. This was particularly the case with regard to imported fibre strains, such as Hunters Hybrid, and "J.W.S." The excellent results

obtained last year with these strains in the Messaoria, as well as in Paphos, are beginning to convince farmers of the superiority of pure strains for fibre production. The scutching mill at Zodia was operated for a short period only, owing to the reluctance of farmers to have their flax scutched for their own account; the Mandria mill, on the other hand, is being worked to full capacity, and the farmers are obviously appreciating the assistance afforded by the Department.

* * * *

The participation of Cyprus in the Salonica Fair, which was held during August last, and to which reference was made in the Editorial Notes in the previous issue of this Journal, proved most successful. (See pages 97-111 for full report).

The following is an extract from the issue of the *Near East and India* dated 22nd October, 1931:—

“For some time the Cyprus authorities have been making special efforts to develop the export trade of the Island, and, in pursuance of this policy, a comprehensive range of Cyprus products was shown at the recent Salonica Fair. It is very satisfactory to learn that this enterprise proved a great success, and if Greece can be persuaded to reduce her tariffs on certain commodities, the Island should be able to find an increasing market in that country for various products. But it is not easy to bring about a reduction of tariffs in the Balkan countries. It is evident that there is a very real appreciation in Greece of the quality of Cyprus products, and it is noteworthy also that the adverse effects of the tariff appear to be generally understood—one paper, indeed, refers to it as a ‘Chinese Wall.’”

The Cyprus Agricultural Department was awarded the Grand Prix of the Exhibition for the high quality and excellent arrangement of its exhibits, and also Gold Medals for individual exhibits of Flax, Silk Cocoons, Hazelnuts and Skins (furs, gloves, etc.), and a Silver Medal for Cheese. The Land Registration and Survey Department was awarded a Gold Medal and Commendation for a special Relief Map of Cyprus and various other Cyprus maps. The Cyprus Chamber of Commerce was awarded a Diploma and a Gold Medal for its part taken in the organization and participation of Cyprus in the Exhibition. In addition, there were awarded to private exhibitors one Grand Prix for Commandaria Wine, and fifteen Gold and eight Silver Medals and eight exhibits received special commendation.

* * * *

Reports on the 1931 vintage have not been very favourable. Production is considerably below average. Prices for grapes and wine products have, however, been satisfactory and the demand for Cyprus wines has been steady.

The reduction in crop is attributed to various causes. Climatic conditions during the year were unfavourable. The heavy spring rains delayed the work of pruning and cultivation in the vineyards. The abundance of rains also caused too vigorous vegetative growth. In addition to the damage done by the Grape Berry Moth and Oidium, an outbreak of Peronospora, owing to the unfavourable climatic conditions, which prevailed during the early summer, had some considerable effect on the production.

* * * *

The citrus export season is now in full swing. Greater quantities of oranges are being exported in cases; this is quite a change from previous years when practically the whole of the exports were despatched in baskets or in bulk. Shipments to the United Kingdom are also greater than they have been hitherto and new markets are being explored in India and Port Sudan.

* * * *

The export trade in certain agricultural commodities during the months of October and November, 1931, shows an appreciable increase as compared with the previous months in 1930, while others are showing a considerable decrease. Animals, onions, potatoes and wines are of particular importance in the former category, while in the latter the most important are cotton, pomegranates, raisins and tobacco.

Business in carobs, which showed a decrease in October, improved considerably in November.

The Comptroller of Customs and Excise in his brief report on Cyprus trade during the month of November, 1931, comments that trade continues to show in general the effects of the present world depression.

* * * *

Owing to shortage of local grown stocks, barley was imported from Anatolia to the value of £3,398 during October and £6,009 in November.

* * * *

It is with regret that we announce the death at Nicosia during November last of Mr. H. Campbell, M.C., of Boghaz, Kyrenia. Mr. Campbell was a frequent contributor to the pages of this Journal and he took an active interest in the many agricultural problems of local interest. Recently he built a summer residence near Prodromos and in the last issue of this Journal was published an article by Mr. Campbell on "Market Gardening round Prodromos."

Report on the Participation of Cyprus in the 6th International Fair of Salonica.

(13TH to 27TH SEPTEMBER, 1931).

By Mr. P. M. Symeonides, Inspector of Agriculture, Exhibition Commissioner, and Mr. Th. G. Tavernaris, Secretary, Cyprus Chamber of Commerce, Assistant Exhibition Commissioner.

PRELIMINARY WORK.

ALTHOUGH the decision to participate in the International Fair at Salonica this year was taken rather late, the Department of Agriculture within a period of less than two months arranged the collection, sorting and packing of the various exhibits, most of which were obtained from producers, merchants and manufacturers in the Island.

As the time at our disposal was short, we went round the various towns and villages of the Island and paid a personal visit to likely exhibitors, but unfortunately an unexpected reluctance to take any interest was shown by many on whom we called.

The exhibits were received at various centres of the Island by officers of the Agricultural Department, who forwarded them to the Headquarters of the Department at Nicosia, where they were suitably packed, and on the 22nd of August, 108 packages were despatched from Larnaca to Piræus by the Lloyd Triestino steamer *Celio* for transhipment to Salonica.

We proceeded by the same steamer thus making it possible for us to look after the exhibits during the whole journey.

THE CYPRUS PAVILION.

General.

The Pavilion occupied by the Government of Cyprus was the largest private Pavilion at the Fair. The building occupied a space of 190 sq. metres and was situated at the apex of the angle of the two main avenues of the exhibition grounds.

The decorating and the furnishing of the Pavilion presented rather a difficult task on account of the limited funds at our disposal.

External decorations were limited to painting the four pillars with the British National colours and placing in the middle upper-part of the front wall a board bearing the Cyprus Coat of Arms with the word 'CYPRUS' in large Greek letters underneath.

The interior walls of the Pavilion were decorated with a fresco bearing designs in black, gold and rose after the original of an antique Cyprus vase. This proved to be very decorative and matched the various curtains and other Cyprus-made coloured fabrics which were exhibited in the windows or on the walls between the fresco and the stands.

Special attention was given to the display of some 50 large-size photographs and maps of the more interesting Island centres illustrating the agricultural and commercial activities and tourist centres as well as recent developments in building and road-making.

The Relief Map of Cyprus, exhibited by the Land Registration and Survey Department, was particularly commended by visitors whom it helped a great deal to visualize the system of roads, the situation of the various towns and tourist and holiday resorts and the Island in general.

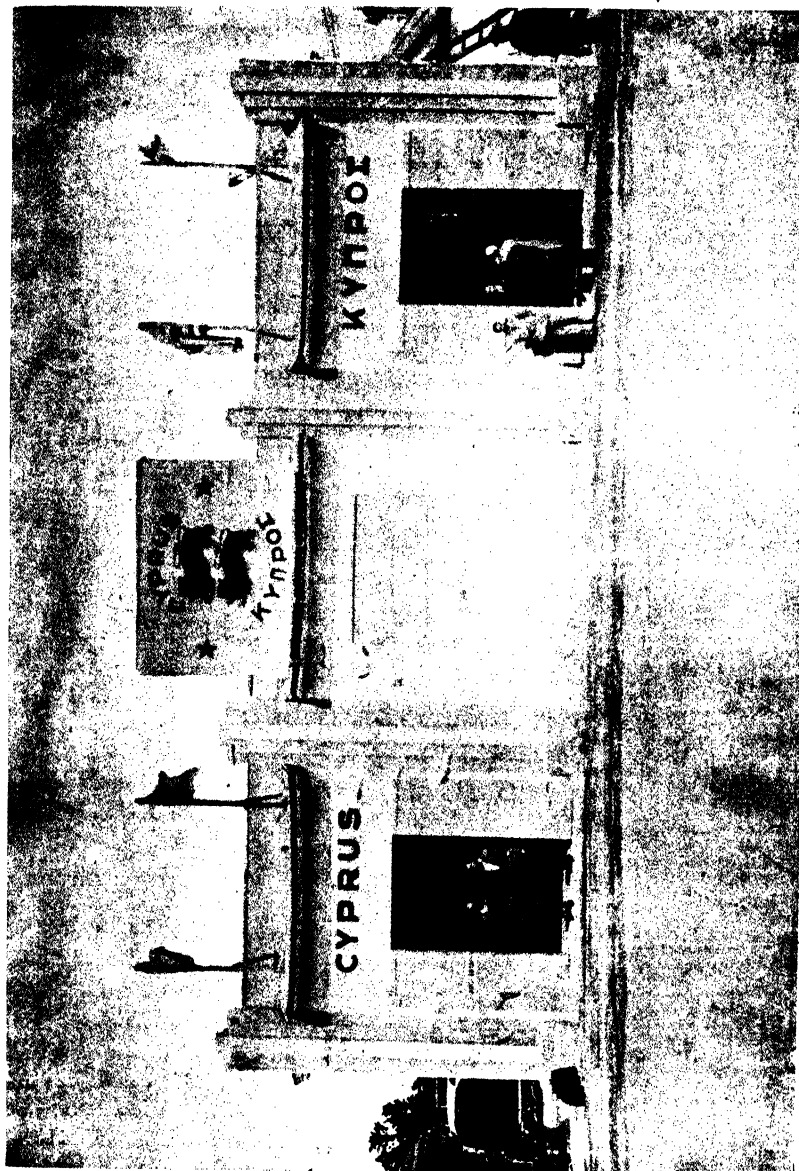
The exhibits were arranged as follows :—

- (a) In two rows, on stands parallel to the walls.
- (b) In three large show-cases, kindly lent by the Authorities of the Fair, free of charge, placed in the centre of the Pavilion.
- (c) On some smaller stands in front of, and on each side of the show-cases.

GENERAL DESCRIPTION OF EXHIBITS.

The Department of Agriculture supplied exhibits of agricultural and industrial products, amongst which were included various varieties of wheat, barley and oats ; cotton, flax, hemp, lemons, tobacco, potatoes and onions ; cumin, aniseed, linseed, beans, peas and lentils ; almonds, walnuts and hazelnuts ; silk cocoons and silk ; wool, leathers, skins and brooms. The Principal Forest Officer sent exhibits of Cyprus timber and forest products. The Land Registration and Survey Department kindly lent an excellent collection of maps, amongst which was a relief map of Cyprus which attracted considerable attention, while the Inspector of Mines provided a collection of minerals, amongst which were included asbestos, copper pyrites, terra umbra and magnesite.

The principal items exhibited by private exhibitors were : wines, carobs, sumac, asbestos, pyrites, mineral colours, roof tiles and bricks, embroideries, cotton, wool and linen fabrics, Turkish delight, dried fruits, lemon and orange juices, cheese, olive oil, " Ceraton " face cream, macaroni, deep well pumps, ropes and baskets.



Exterior view (front) of Cyprus Pavilion.



Interior view of the Pavilion showing tobacco, cereals, fodder plants and potatoes as well as an agricultural map of Cyprus, etc.

OPENING OF THE EXHIBITION.

The 6th International Fair of Salonica was opened on Sunday, the 13th September, and closed on Tuesday, the 28th September, 1931. The opening ceremony took place at 10 a.m. at the junction of the two avenues of the Exhibition grounds, just in front of the Cyprus Pavilion.

Immediately after the Opening Ceremony an official visit was made to the various Pavilions. The Acting British Consul-General of Salonica was present during the official visit.

The Fair was open to the public from 9 a.m. to 1 p.m. and from 4 p.m. to 9 p.m. daily.

Official statistics record that more than 200,000 persons entered the Exhibition grounds and the majority of the visitors are believed to have entered the Cyprus Pavilion.

CEREALS.

The section for cereals attracted considerable attention. Government officials, as well as members of the Agricultural Co-operative Societies, took a great interest in the Cyprus wheats, "Kyperounta," "Psathas," "Tripolitico," "Akathiotico," "Kambourico," and the barley of Paphos.

Several inquiries were received as to whether any seed wheat of "Psathas" and "Kyperounta" varieties were obtainable in Salonica but unfortunately a negative reply had to be given as there were no such stocks available. If there had been a stock of pure seed at Salonica, or even in Cyprus, many thousands of kilés could have been easily disposed of.

POTATOES.

Many inquiries were received as to supply of potatoes. Cyprus potatoes are well known to the public of Salonica and they command a reasonably high price. Unfortunately under the present shipping conditions, Cyprus potatoes are unable to compete profitably with Hungarian potatoes which are offered at 2 to 3 drachmas less per oke.

COTTON.

Greek spinners, although agreeing that Cyprus cotton is very good, now give preference to cotton supplied from Asia Minor as it is considerably cheaper.

SILK AND SILK COCOONS.

Silk and silk cocoons were pronounced by silk-reelers to be of a very good quality. Inquiries were received regarding the production in the Island as particularly this year the quantity of cocoons produced in Greece is not sufficient to keep the Greek Silk Filatures continually employed and cocoons are imported from Yugoslavia for this purpose.

LEMONS.

Many enquiries were received regarding lemons for Macedonia, Yugoslavia and Bulgaria. Cyprus lemons do not compete favourably with Italian lemons on account of the higher freight costs of the former, although it is believed that with better organization, proper grading and packing, they could find a ready market at and through the Port of Salonica.

ORANGES.

Many importers from Greece, Yugoslavia, Bulgaria and Czechoslovakia enquired regarding oranges. Cyprus oranges are already established on these markets where they are greatly appreciated. This trade could be greatly increased, provided better shipping facilities, proper grading and packing, and better marketing arrangements existed.

HEMP AND FLAX.

Several rope manufacturers made enquiries as to the quantity of hemp produced in the Island and its value. It appears, as in the case of cotton, that merchants prefer Yugoslavian hemp which is already exported to Greece and is employed in the Greek rope-making factories. Less interest was shown with regard to flax fibre and tow for the reason that there are no spinning mills in the Balkans. Moreover the price quoted for flax tow was double that which is being paid for hemp tow imported from Yugoslavia. There is, however, a possibility of creating a certain market for the rough flax tow.

WOOL.

Several carpet manufacturers made inquiries. It was stated a good percentage of Cyprus wool contained rough hairs (skylotriha), which is a great disadvantage, as they do not absorb dyes. They pointed out, however, that there would be a chance for Cyprus wool to find a market in Greece now, as the Turkish Government, in order to protect the carpet-making industry, has prohibited the export of wool from Turkey. As far as we are aware the other source of import of wool into Greece is Brazil with which Cyprus could compete on account of the distance.

CAROPS.

The Cyprus carops were admired for their excellent quality but it is feared nothing can be done in Greece. Further investigations may show whether there are possibilities for the export of kibbled carops to Yugoslavia where they could be used in winter for feeding cattle.

SUMAC.

Investigations were made as to the possibilities of tanners utilizing ground sumac, but it appears that they prefer to use ready-made extracts.

LEMONADE AND ORANGEADE.

There are good prospects for both these commodities, mainly for the former, if a uniform quality is produced.

WINES.

The 126 bottles of Cyprus wines, which were exhibited on a special stand, attracted great interest and a high opinion was expressed as to their quality, especially some wines such as "Graves," "Aphrodite" and "Nama" produced by two Limassol firms and the "Old White Wine" produced by a Nicosia firm.

The sparkling wine exhibited by another Limassol firm was also favourably commented upon.

Commandaria, which is a speciality of the Island and which has an established reputation, is in demand in Greece, especially for medicinal purposes. It appears that, in general, there is no great prospect of trade for Cyprus wines in Greece on account of the heavy import duties and the fact that Greece is also a wine-producing country.

Czechoslovakia imports considerable quantities of foreign wines mainly from Yugoslavia and Italy. The Representative of the Czechoslovakia Firm, who acts as the Agent of the Co-operative Societies of Commerce of Czechoslovakia, took a great interest in our wines and expressed the desire of being supplied with samples of all the various wines of Cyprus. Yugoslavia, although a wine-producing country, may occasionally require quantities of wines suitable for blending purposes.

BRANDY.

Special mention is made of the brandy and ouzo (120 bottles) exhibited by various Limassol, Larnaca and Nicosia firms. The brandy of a Limassol firm was particularly commented on, and was considered as one of the best quality brandies manufactured outside France.

MINERAL COLOURS.

There are possibilities of establishing a trade in terra umbra and terra verte, if the markets of Greece and the other Balkan States, which import similar colours of chemical composition, were fully investigated.

FURS AND GLOVES.

Kid, lamb and fox furs, as well as white leather and gloves, which were exhibited by the Agricultural Department, were admired for their excellent finish and appearance and were very favourably commented upon by fur experts.

COTTON AND SILK FABRICS, LACES AND EMBROIDERIES.

Cotton and silk fabrics, such as curtains, sheets, bands, covers, and handkerchiefs, along with the laces and embroideries, which were displayed on the walls and inside show-cases, attracted considerable attention. The combination of colours, designs and workmanship were the subject of favourable comment.

TURKISH DELIGHT.

There was a special demand for the Turkish delight of Lefkara, the quality and flavour of which was highly commended, but the sale price was prohibitive owing to the very high import duty which amounted to double the actual price of the box. The best Turkish delight sold in Greece is produced in Syra. Turkish delight is exported from Syra to all parts of the world, and particularly to England the trade being well established by advertisement propaganda.

" CERATON " FACE CREAM.

Samples of " Ceraton " face cream manufactured from Cyprus carob seeds by a British firm with business connections in Cyprus created considerable interest.

DEEP WELL PUMP.

The Cyprus-made deep well pump, made by Messrs. Vassilis Kassianides & Bros. of Nicosia, attracted a great deal of attention, and it is hoped these pumps may ultimately be sold in Greece.

OLIVE OIL.

The samples of olive oil exhibited and examined by Experts were stated to be good and clear but contained a high percentage of acidity.

SALT.

The Government salt monopoly of Yugoslavia, invites tenders annually for the supply of salt valued up to 15 million dinars.

OTHER EXHIBITS.

Small straw baskets made in Vassa and Lapithos and coloured cement floor tiles made by a Nicosia firm were commended for their good quality, workmanship and design. The *Sultanas* and the *Honey* exhibited by the Stavrovouni Monastery were also very favourably commented upon.



Interior view showing potatoes, dry fruits, leguminous seed, Turkish delight, cotton, sultanas, etc.



Interior view showing onions, lemons, water melons, flax fibre, yarn, linseed, aniseed, cumin (white), sumac, carobs, linseed and cotton cakes, brooms, hemp, ropes, etc.

INQUIRIES.

During the Fair we held 95 interviews on various trade enquiries.

While at Salonica we took the opportunity to approach the Greek Chamber of Commerce of Salonica, the Yugoslavian Chamber of Commerce of Salonica, the Organization of the Free Zone, of which we visited the store accommodation at the Port, the Czechoslovakian and Yugoslavian Representatives at the Fair and the members of the Yugoslavian Trade Mission who spent one day at Salonica.

With the above Representatives we considered questions concerning the export of Cyprus products, particularly in regard to cereals and citrus fruits, and we are of opinion that there are good prospects for our oranges and lemons in Southern Yugoslavia (Scoplje region). The Chamber of Commerce of Scoplje promised to render every assistance.

Before repacking the exhibits for return, samples of cereals, leguminous seeds, oil seeds, fodder plant seeds and industrial plant seeds, flax straw, flax and hemp fibre and minerals were given, by request, to the University of Salonica and placed in their Natural History Museum as permanent exhibits of Cyprus.

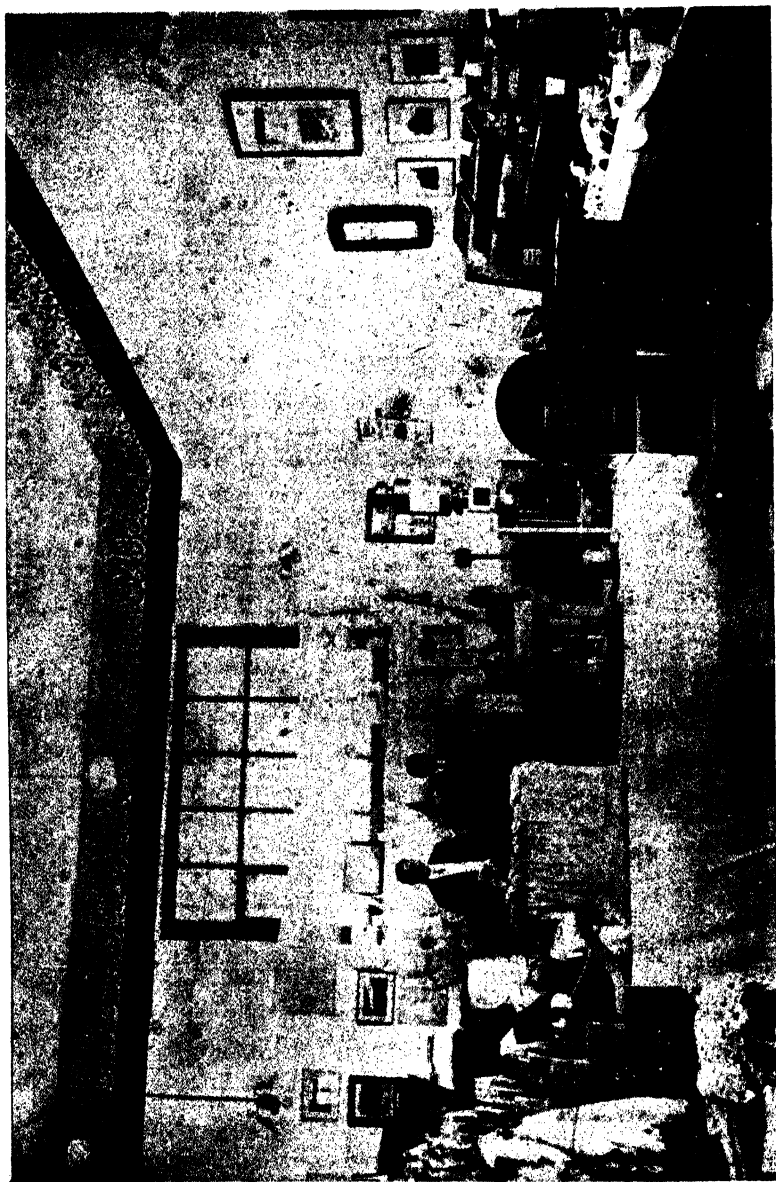
Similar samples were given to the Merchandise Stock Exchange and to the Agricultural Station of the Ministry of Agriculture at Salonica.

AWARDS.

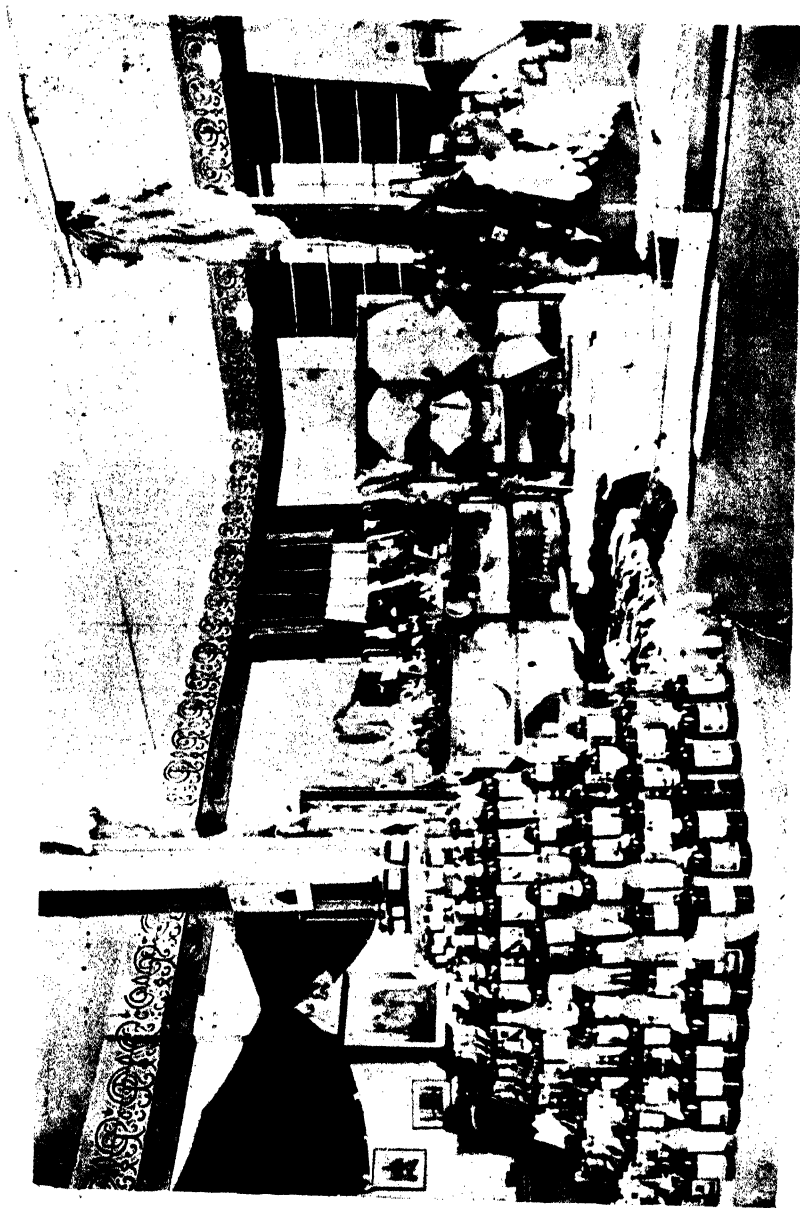
A list of awards made by the Exhibition authorities to exhibitors in the Cyprus Pavilion is given in the Appendix to this report.

In conclusion, we desire to express to the Committee and the Management of the Fair our sincere thanks for their kind assistance and facilities given to us during the whole period of the Fair; also to the British Consul-General, H. G. Chick, Esq., C.B.E., and the Acting British Consul, Mr. Meade, for the active interest they have taken during the Fair in the Cyprus Exhibits.

We further consider it our duty to thank the merchants, producers and manufacturers in Cyprus who supplied the exhibits which were shown at the Fair and particularly those who contributed by kindly lending their valuable maps, photographs and fabrics for the decoration of the Pavilion.



Interior view showing embroideries, irrigation pump, terra umbrà, various other minerals, soap, macaroni, lemonades, etc.



Ceiling of the Pavilion showing fabrics, cotton, silk, linen, embroideries, laces, straw baskets, furs, leather, leather gloves, wine and spirits, etc.

APPENDIX.

LIST OF AWARDS MADE TO CYPRUS EXHIBITORS.

Name	Address	Exhibit	Prize awarded
Agricultural Department	Cyprus	For the excellent Agricultural exhibits and their arrangement in the Pavilion	Grand Prix
" "	"	Flax	Gold Medal
" "	"	Silk cocoons	Gold Medal and commendation
" "	"	Cheese : Kephaltiri (Paphos)	Silver Medal
" "	"	Hazel nuts	Gold Medal
" "	"	Skins, leathers, furs, and gloves	Gold Medal and commendation
L.R.O. & Survey Department	Nicosia	Relief map of Cyprus and various maps of Cyprus	Gold Medal and commendation
Cyprus Chamber of Commerce	"	For organization in the participation of Cyprus in the Exhibition	Diploma with Gold Medal and letter of thanks
Christodoulou, Costas	"	Silk and cotton fabrics	Gold Medal and commendation
Christodouloupas Bros.	"	Commandaria, White & Red Wines	Gold Medal and commendation
"	"	Cognac	Silver Medal

Name	Address	Exhibit	Prize awarded
Cyprus Wine & Spirits Co., Ltd. (the)	Limassol	Commandaria, Othello, Cœur de Lion, Narna, Templar, Aphrodite, Graves	Gold Medal and commendation
Perapedhi Wines and Spirits Association (the) ..	"	Commandaria, Graves	Gold Medal
Cyprus Umber Industrial Co., Ltd. (the) ..	Larnaca	Terra Umbra	Gold Medal
Georgiades, Evr. ..	Nicosia	Cheese : Kephilotiri	Commendation
Haralambous, Savas ..	Kyrenia	Olive oil	Silver Medal
Joannou, P. & C. Co. ..	Famagusta	Cotton Yarn	Gold Medal
" ..	"	"	Gold Medal
Joannides, Th. ..	Morphou	Figs	Gold Medal
Kassianides, B. & Brother. ..	Nicosia	Deep well pump	Gold Medal
Kolakides Bros. & Co., Ltd. ..	Limassol	Soap	Silver Medal
Krambides, Th. ..	Lefkara	Turkish delight	Gold Medal and commendation
Loucaides, G. ..	Larnaca	Embroideries	Gold Medal
Mantovani, A. L. & Sons ..	"	Terra Umbra	Silver Medal
Matsoukis, G. ..	Paphos	Flax Tow	Gold Medal
Utidiian, Emm. ..	Ay. Amvrosios	Dried apricots	Gold Medal
Peristianis, I. ..	Limassol	Cognac V.O.	Gold Medal
" ..	"	Commandaria of 1850	Grand Prix
Parounakian & Kyriakides	Nicosia	Soap	Silver Medal
Pittarillis & S. Makariou ..	"	Cement floor tiles	Silver Medal
Stavrovouni Monastery ..	Stavrovouni	Honey	Commendation
Tsimounis, K. ..	Karavas	Lemon Oil	Silver Medal
Valdasserides, M. Th. ..	Larnaca	Cognac 3-star	Gold Medal
" ..	"	Old wines 10, 15 and 20 years	Gold Medal and commendation
Hadjipavlon, Ch. & Sons, Ltd. ...	Limassol	Cognac	Gold Medal and commendation
Nicolaides, Diogenis ..	"	Mousse d'Or.	Gold Medal
Pierdes. Z. D. ..	Larnaca	Terra Umbra	Silver Medal

The Participation of Cyprus at the Eleventh Annual Imperial Fruit Show, Manchester, 1931.

THE photograph reproduced on page 113 of this issue, kindly furnished by the Trade Commissioner for Cyprus in London, shows the arrangements made by the Trade Commissioner for the participation of Cyprus in the Empire Marketing Board's Section of the 11th Annual Imperial Fruit Show held at Manchester during October 30th to November 7th, 1931.

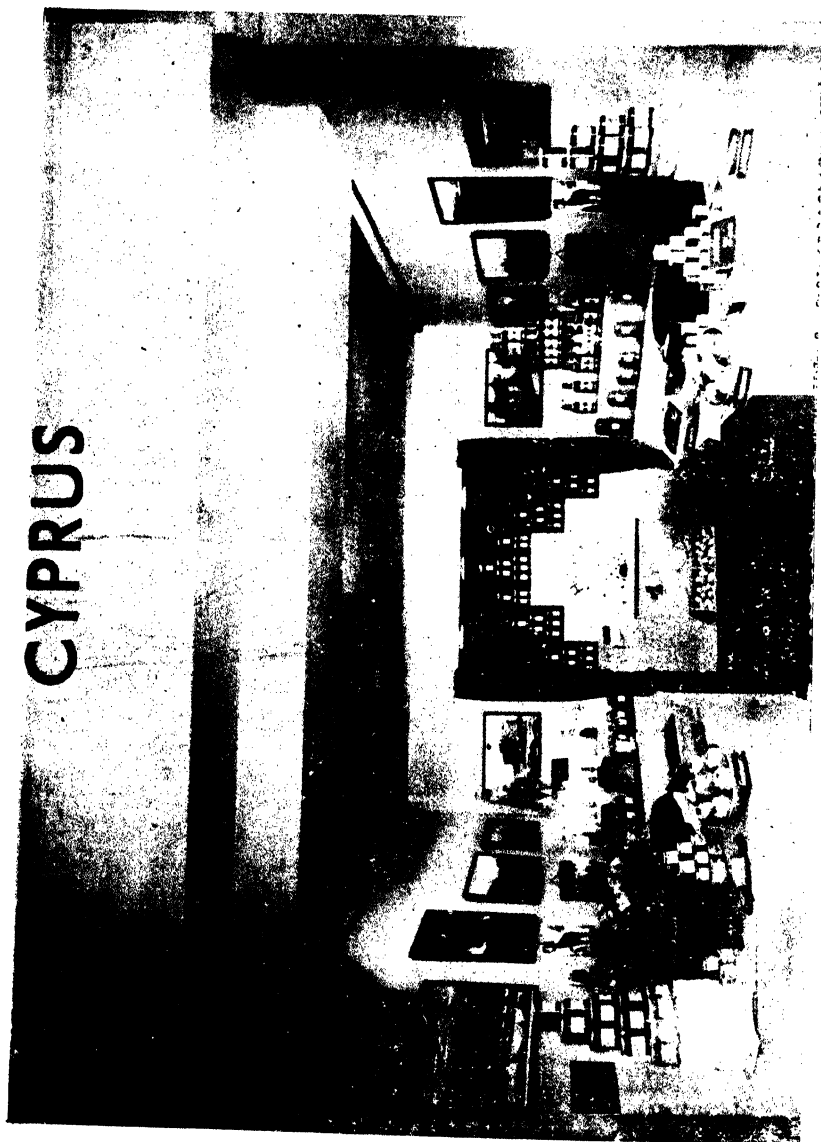
The Trade Commissioner has reported as follows on the participation of Cyprus :—

Cyprus was this year represented in the Empire Marketing Board's Section at the Imperial Fruit Show for the first time since 1928. The Show was held in the City Exhibition Hall, situated near the centre of the town, and was open to the public daily from 10 a.m. to 10 p.m. from the 30th of October to the 7th of November, excluding Sunday, during which period approximately 80,000 people visited it. The opening ceremony was performed by the Lord Mayor of Manchester.

The Cyprus Stand covered an area of about 168 square feet, and the exhibits included a fine sample of pomegranates which aroused considerable interest and were said to be the only specimens in the Exhibition. A display of honey also attracted attention, more especially among retailers and the public. Other exhibits were a case of lemons, one of a consignment recently imported by a Covent Garden firm, dried figs, raisins, carobs, nuts, almonds, oil-seeds, brandy, orange and lemon squash, and marmalade of which sample jars were sold, the receipts amounting to over £12.

Enquiries were received in respect of honey, raisins, pomegranates, marmalade, groundnuts, and fruit baskets.

Other participants in the Empire Marketing Board's Section were England and Wales, Scotland, Northern Ireland, Australia, Canada, New Zealand, South Africa, Southern Rhodesia, and Malaya.



Cyprus Exhibit, Eleventh Annual Imperial Fruit Show, Manchester, 1931.

Viticulture in Greece.

THE following is a translation of an Abstract from an article entitled "Ciò che v'è di nuovo" which was published in the *Giornale Vinicolo Italiano* dated the 13th September, 1931.

"Mr. Leon Douarche, the Director of the International Wine Office, has published in the *Bulletin International du Vin* an interesting study on viticulture in Greece.

It is stated that the average area cultivated with vines, in Greece for the last 10 years is approximately 200,000 hectares and the average wine production for the same period is 2,800,000 hectolitres. The average production of wine during the period 1909 to 1913 was 2,300,000 hectolitres.

The vine areas are concentrated in certain parts of the Greek territory. The largest centre of production being Peloponnesus, a narrow strip of land extending to some 400 kilometres in length of which the north-western shores are intensively cultivated with vines. With the exception of the regions of Pyrgos and Kalamata, consisting of a plain of 20 kilometres in extent, the shores of Peloponnesus are bordered with rocky hills dominated by high mountains.

The vine in Greece is not generally cultivated beyond an altitude higher than 100 to 150 metres with the exception of the vines cultivated in the mountainous region of Aighion in Corinth where vines are grown at an altitude of 500 metres.

Besides Peloponnesus, the principal vine-growing centres are Corinth, Aighion, Patras, Amalias, Pyrgos, Kyparissia, Pylos, Methoni, Kalamata, Attica, Eubia, North Thessalia, a part of Macedonia and the Calcidica peninsula. Other important producing areas are the Islands of Samos, Crete, Santorini, Cefalonia, Zante, Corfu, Leucadia and Poros.

The cultivation of vines is extending rapidly in Northern Greece where in 1928 were planted some 10,000,000 American vines, grafted and ungrafted.

The vineyards of Old Greece have up to the present time been free from phylloxera. Phylloxera exists in Macedonia and seems to extend towards the south. Thessalia is already an area declared infected by phylloxera and strong measures are taken to keep Southern Greece free from phylloxera.

If this plague ever fell on the precious vineyards of Corinth, the loss would be enormous for Greece.

The following is the wine production of Greece from 1920 to 1929 :—

Year.		Hectolitres.	Year.		Hectolitres.
1920	.. ..	1,948,000	1925	.. ..	3,220,000
1921	.. ..	2,300,000	1926	.. ..	4,000,000
1922	.. ..	2,200,000	1927	.. ..	3,270,000
1923	.. ..	2,200,000	1928	.. ..	4,300,000
1924	.. ..	2,200,000	1929	.. ..	2,600,000

The organization of the Greek wineries has been considerably improved by means of reduction in expenditure, methodical management and introduction of modern machinery and a great development in the wine trade is observed. Greek wines have an important market in France, where they are used for blending purposes. Italy, Germany, Austria, Czechoslovakia, Holland, Belgium and Switzerland are also important markets on a smaller scale. Malta and Egypt in recent years are considered the best markets for Greek wines and grapes.

The total exports of wines from Greece from 1912 to 1929 are as follows :—

Year.		Tons.	Year.		Tons.
1912	.. ..	56,000	1924	.. ..	33,400
1913	.. ..	76,600	1925	.. ..	96,800
—		—	1926	.. ..	152,100
1920	.. ..	12,600	1927	.. ..	113,300
1921	.. ..	50,500	1928	.. ..	134,000
1922	.. ..	43,900	1929	.. ..	94,600
1923	.. ..	24,700			

The annual average production of wines in Greece for the last 10 years is 310,000 tons and the export trade has varied from 5 to 20 per cent. from 1920 to 1924 to 30 per cent. in 1925, 49 per cent. in 1926, 37 per cent. in 1927, 45 per cent. in 1928 and 30 per cent. in 1929 which indicates that in proportion to production Greece is the first wine exporting country in the world.

The development of the Greek wine trade has been considerably helped by the organizations of the big wine firms and mainly by the Representatives and Agents of the two big wine Societies of Greece namely the Wine and Spirits Hellenic Society and the Central Raisins Organization who have Agents in the principal foreign markets (Paris, Hamburg, Vienna, Milan, London and Trieste)."

Insect Pests of Stored Grain.

SOME of the most serious losses caused by insects in Cyprus are due to the attacks of insects on wheat, barley and other grains while in storage, and these losses could be almost entirely avoided by taking greater care in the treatment and storage of these grains. This question has been referred to previously in this Journal (Vol. XXIV, page 148, October, 1929), but it is of such great importance that it appears desirable to refer to it again.

Requests are not infrequently received by the Agricultural Department for some treatment to be applied to stored grain which is being damaged by insects, but in almost all cases the way in which the grain is stored is such as to offer little hope of its being possible to apply any treatment successfully. In Cyprus, grain is usually stored in a heap on the ground in an ordinary room or building which is used for other purposes, and is thus entirely unprotected from infection, while the building is quite unsuitable for fumigation. Little or no attempt is made to clean the building before the grain is brought in and if the grain is not then already infected it is likely to be infected immediately from insects remaining in remnants of the grain stored in the same place the previous year.

Although infection may occur from insects in the remains of the previous year's crop remaining in the store, infection of the grain may also occur at any time after the ripening of the grain in the fields. Damage to grain thus often occurs while the unthreshed crop is waiting either in the fields or piled up beside the threshing-floor, and the longer the grain has to wait before being threshed, the more serious is the damage, which is also continued after the infected grain has been threshed and carried to the store. Most of the insects damaging grain are able to fly and, therefore, can easily travel to the fields or stores.

One of the ways of avoiding damage to the grain by insects is, therefore, to have the crop threshed as soon as possible after it is ripe, and as the use of modern threshing machines considerably expedites this work and avoids the delay which is often unavoidable when the grain is threshed on threshing-floors by the old methods, this is a strong additional reason for recommending the use of modern threshing machines.

Whether threshed by old or modern methods, the grain may, however, have been infected before it was threshed, or if taken into an infected store or mixed with infected grain, damage by insects will soon become apparent.

In order to avoid this risk of damage, the grain should be stored in such a way that insects are prevented from having access to it or so that, if insects do appear in the grain, the grain can be treated quickly and easily so that further loss is prevented,

and in most cases where grain is to be stored for any length of time it is strongly recommended that it should be placed in a properly constructed bin or store and fumigated at once to kill any insects which may be in it and then kept in the store to prevent new attacks.

It is often believed that insects appear spontaneously in the grain while in the stores, but this is not so. Insects found in grain have developed from eggs laid by other insects and if the insects are destroyed at their first appearance no more insects will be found in the grain, provided it is stored in such a way that insects are unable to enter it from outside. The small size of the early stages of the insects and the fact that these early stages are usually hidden inside grains where their presence can hardly be detected have helped to give support to this view.

The importance of proper storage of grain is thus obvious, and it would be difficult to find a less suitable method than that commonly practised here of heaping the grain on the floor of a building used for this and other purposes year after year without any precautions being taken. The cost of providing a suitable store in which grain could be kept free from insect attacks, or in which it could easily and cheaply be treated should such attacks appear, is not large and would be amply repaid by the saving of grain which it would ensure within a few years.

For the storage of a small quantity of grain an iron drum provided with a tightly fitting lid is very satisfactory, and a structure or building of sheet iron can be made of any size which may be required by the amount of grain which has to be stored. If preferred, the store can be of stone or brick and, if well made, stores of such materials will be completely satisfactory. Wood may also be used for constructing stores but is much less satisfactory than the other materials mentioned for use in Cyprus, owing to the wood being liable to crack and warp. If made of wood, the walls should be of a double thickness of tongued and grooved boards with a layer of thick paper between.

Whatever kind of bin or store is made, whether to contain a few kilés of grain or large enough to contain several thousand kilés, it must be so constructed that it can easily be made completely air-tight, all doors or ventilation openings being arranged so that they can easily be sealed while the fumigation is in progress. After the fumigation, the store must be ventilated but the ventilation openings must be covered with material to prevent the entrance of insects.

The fumigation of such stores can easily be undertaken by their owner, and the cost of such treatment is small.

Further information regarding the construction of grain stores can be obtained on application to the Agricultural Department.

Rhubarb.

RHUBARB is one of the easiest crops to grow and for this reason in some countries we seldom find any but professional gardeners giving anything approaching the proper attention that so useful a crop deserves. The quality of the sticks is, to a large extent, determined by the treatment the plant receives, one well grown stick being worth a dozen tough and stringy ones.

The Rhubarb of commerce is an important medicine valuable for its mild purgative qualities, it is used as a sweet and also for making wine.

Several species of *Rheum* are known, of which the following are the most common :—

Rheum palmatum, first found wild in North Western China, *Rheum officinale* from the eastern frontier of Thibet, and *Rheum rhaponticum* generally called *English Rhubarb*, a native of Siberia and cultivated early in the seventeenth century at Padua whence it was brought to England about the year 1628.

Rhubarb will grow on almost any type of soil, in the open or in the shade, in clay and wet lands or on dry hill tops, but to grow good saleable Rhubarb, soil of the medium loam type and good cultivation are necessary ; the roots should be lifted and re-planted every fourth year at least, and the best varieties only should be grown.

In countries where Rhubarb is grown to any extent new beds are usually formed by planting “setts” consisting of single eyes taken from old shoots and the best time for getting new “setts” is considered to be just previous to the time when the new crowns are breaking into growth.

According to English practice an open situation for the bed should be selected, well away from the “drip” of over-hanging trees, and when the bed is to remain undisturbed for a number of years or where strong crowns are required for forcing purposes, the soil should be trenched, and well decayed organic manure should be thoroughly incorporated with both the upper and lower layers.

Strong “setts” carrying a single “eye” are preferable to those carrying several weak ones, and these should be planted firmly in the ground with the “eyes” just covered with soil. Not less than 3 feet should be allowed between the rows and 2 to 3 feet between the plants in the row.

After planting, little or no attention is required until the “setts” begin to shoot, after which the hoe should be kept going between the rows and water should be given in dry weather.

No pulling should be attempted the first season and only a very limited number of sticks should be taken during the second. Where possible liberal doses of strong liquid manure should be poured over the bed during the second period of growth.

In Cyprus where it is hoped to develop Rhubarb cultivation in the hill districts, trials are being made to determine the best procedure and methods under local climatic conditions. Rhubarb prefers a cool climate and it is not, therefore, expected to thrive except on the hills.

Seaweed as a Fertilizer.

SEAWEED is a capital fertilizer, provided it can be obtained easily and cheaply. It contains many if not all of the necessary ingredients required as plant foods, and it is somewhat similar in character to farmyard manure. On account of transportation expenses, it can only be economically used as a fertilizer on lands in the neighbourhood of the seashore at places where it accumulates in abundant quantities.

In comparing this fertilizer with farmyard manure, the main differences are that seaweed in its organic composition is mucilaginous and succulent, it decomposes quickly and easily but does not have the humus-forming capacity of farmyard manure. On account of the rapidity of decomposition it does not have a lasting effect.

Seaweed is more valuable when dried and it is desirable to wash out the salt before applying it to the land. The process of removing the salt is sometimes done by collecting the seaweed in autumn and leaving it exposed to the rains during winter. In places where a regular practice is made of using seaweed, it is subjected to a special washing process. It is sometimes ploughed in as soon as collected, especially on heavy clays.

The following statement shows the percentage of the principal constituents of dried and fresh seaweed.

	<i>Seaweed dried.</i>	<i>Seaweed fresh.</i>
Water	15.0%	85.0%
Nitrogen	1.4%	0.3%
Phosphoric Acid ..	0.4%	0.2%
Potash	1.6%	0.8%
Organic matter ..	32.8%	12.7%

Seaweed is considered as a suitable fertilizer for vines and in some parts of France is used as such with good results,

EDITORIAL AND ADVERTISEMENT NOTICES.

All communications for publication should be addressed to the Editor *Cyprus Agricultural Journal*, Department of Agriculture, Nicosia.

Communications are invited, written on one side of the paper only. It should be understood that no contributions or specimens can be returned unless postage is prepaid.

Copies of the *Cyprus Agricultural Journal* can be obtained on application to the District Commissioners, or to the Department of Agriculture, price 3cp. per number, or by post 3½cp.

Annual subscription payable in advance 12cp. for residents in the six District towns; outside the District towns 15cp.; Overseas subscription 18cp. (2/-).

SCALE OF ADVERTISEMENT CHARGES.

A uniform reduced rate is charged for all advertisements which covers their insertion in the English, Greek and Turkish issues respectively.

As special efforts are being made to increase the circulation of the Journal in the Colony and Overseas it may be regarded as a valuable medium for advertising.

The following are the rates in force :—

COVER—Full page, 1 year or 4 insertions	...	£2 15 0
INSIDE PAGES—Full page, 1 year or 4 insertions		2 8 0
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For Wants, Articles for Sale or Exchange, Notices of Meetings, Events, etc., for the first 16 words, 2s. Exceeding 16 words but not exceeding 32 words, 4s. For every additional 8 words 6cp.

These charges include insertion in the English, Greek and Turkish issues.

Advertisements should be written on one side of the paper only, and should reach the Editor, *Cyprus Agricultural Journal* at least 15 days before the end of the month of issue.

The "*Cyprus Agricultural Journal*" is published in March, June, September and December.

The Editor does not necessarily endorse the statements or opinions expressed in contributed articles, the responsibility for which rests with the authors.

Sheep, Goat and Pig Returns 1931.

THE figures shown in the following statement, giving the number of sheep, goats and pigs in each district for the year 1931, have been kindly furnished by the Treasurer :—

District.	Sheep.	Goats.	Pigs.
Nicosia	79,643	68,118	9,281
Larnaca	42,140	22,585	2,875
Limassol	25,320	41,054	5,510
Famagusta	96,409	41,878	9,901
Paphos	45,298	41,520	12,758
Kyrenia	16,700	23,822	1,077
Total	305,510	238,977	41,402

The following is a comparative statement of the totals for the past three years :—

Year.	Sheep.	Goats.	Pigs.
1929	272,709	226,850	32,836
1930	290,158	233,600	34,477
1931	305,510	238,977	41,402
Increase since 1929	32,801	12,127	8,566]

Note.—The returns show progressive increases in production in the case of each kind for the years 1930 and 1931.

Production of Silk Cocoons and Silk in 1931.

Districts.	Quantity of cocoons purchased by merchants.	Quantity of cocoons used for silk-worm eggs raising.	Quantity of cocoons spun into thread.	Quantity of cocoons reeled.	Quantity of silk produced.	Total production of cocoons.
	Okes.	Okes.	Okes.	Okes.	Okes.	Okes.
Paphos	28,883	233½	1,726	8,445	1,066	39,288
Nicosia	1,686	609½	1,357	26,195	3,226	29,238
Famagusta	1,645	86	461	21,523	2,628	23,715
Kyrenia	8,050	15	—	24,103	2,954	32,168
Larnaca	1,096	—	915	7,626	921	9,637
Limassol	2,791	235	—	6,958	869	9,984
	44,151	1,179	4,459	*94,850	*11,664	144,030

* All silk reeled by local hand reeling apparatus. The Cyprus Silk Filature closed for the year.

DISTRICT NOTES.

Abstracts from the Reports of the Commissioners, Famagusta, Larnaca and Kyrenia for the quarter ended the 30th September, 1931.

FAMAGUSTA DISTRICT.

Cereals.—As it was anticipated, the wheat crop was slightly over last year's, but of inferior quality, owing to rust and the influx of weeds due to heavy rainfall. In some Karpas villages the harvest of wheat was poor and demands had been received for seed corn.

There was a demand for wheat for seed purposes in this district by the Greek mission. 130 tons were purchased at prices ranging from 3s. 6cp. to 3s. 8cp. per kilé.

Carobs.—The crop is estimated to be about 30,000 cantars and the prices realized were low, from 4s. 4½cp. to 5s. 4½cp., as against 5s. to 6s. last year.

Olives.—The olive crop is promising, but remunerative prices are not anticipated.

Pomegranates.—The crop was up to standard, but the heavy import duty in Egypt and the demand for the fumigation of all consignments in Egypt at a charge of £1 per ton brought export of this fruit to that country to a standstill.

Tobacco.—This crop will be comparatively small this year on account of the smaller acreage, namely, 498 donums against 1,484 in 1930.

Silk Cocoons.—The quantity of silk cocoons reared this year is estimated to be about 23,629 okes as against 25,956 okes last year. Prices realized were 7cp. to 8cp. per oke, and on account of the poor price nearly all the crop was reeled by the villagers themselves.

Cotton.—The cotton crop is reported to be up to the average, although late sown cotton was affected by boll worm. Prices were low.

Grapes.—The yield was a good one.

LARNACA DISTRICT.

Cereals.—The wheat harvest was patchy. In Athiænou which is the largest cereal-producing village, it was well over the average, but in some villages, especially those near to the sea, the wheat was attacked by rust. Generally the wheat harvest was better than that of last year. Barley production decreased considerably owing to bad weather conditions and much reduced acreage.

Carobs.—Production is well over the average and of good quality, but prices started very low around 4s. per cantar as compared with 6s. to 7s. in 1930 and 12s. to 15s. in 1929.

Cotton.—The harvesting of cotton had only just begun. It appears that later sown cotton has been attacked by boll worm.

Olives.—The yield is well above the average and of good quality.

Grapes.—These were affected by damp weather in June and July and the yield has been poor.

KYRENIA DISTRICT.

Wheat.—The production of wheat has been on the whole average, but the produce is of inferior quality; it contains a great percentage of impurity which is due to the fact that the weather has been rather favourable for the development of weeds. Since the new crop appeared on the market, prices have fallen; it is now being sold at about 3s. to 3s. 4½cp. per kilé.

Barley.—Owing to the limited area laid out for barley cultivation and unfavourable climatic conditions, the production was much below the average. On the other hand prices were maintained at a high level compared with last year; it is at present being sold at 2s. to 2s. 2cp. per kilé.

Oats.—Very small quantity was produced of which there is none available at present.

Potatoes.—The comparatively high prices offered for the summer crop caused a large area to be planted with potatoes for winter production; there is a good demand from the neighbourhood. Price £6 per ton.

Onions.—There has been a good production of both onions and onion sets; prices for both are satisfactory.

Tobacco.—The area planted with tobacco was reduced this year. The great point about tobacco cultivation was to reduce the planted area and concentrate on the production of leaves of better quality by giving the plants proper treatment. Tobacco growers were also advised to avoid watering the plants; this causes deterioration in quality. Picking and drying the leaves has taken place under suitable climatic conditions and it is believed that the final product will be of better quality.

Cotton.—A satisfactory area was planted with cotton; production is fair. Picking is in full swing now. No appreciable damage has been recorded by any disease or through unfavourable wet weather. Market prices are rather low.

Carobs.—Gathering is almost over and the largest part of the crop is already in store. The production is a fair one. There is no improvement of market conditions; prices are very low, averaging 5s. per cantar.

Olive.—There has been an over production of olives this year. The olive crop is well advanced and new olive oil has appeared in the market. The damage done by *Dacus* to this crop is not so great as in previous years. Due to the large production, it is expected that the prices will soon fall considerably.

Citrus.—The production of oranges is poor, while the production of lemons is estimated to be satisfactory. It is expected that lemons will be sold at good prices and this is greatly due to the fact that large quantities are being bought at the rate of 10s. per thousand for export to New Zealand.

Rat Campaign.—The destruction work was based lately on more extensive and systematic lines. The number of labourers employed was increased and also the quantity of baits used. It was found out that hornets' nests can easily be destroyed by Cyanogas used for the destruction of rats and Rat Destruction Officers were instructed to do so whenever hornets' nests were met.

Cyprus Agricultural College, Nicosia.

ENTRANCE EXAMINATION 1931.

THE entrance examination for the Session 1931-32 was held on the 22nd September, 1931.

There were 172 Greek and 75 Turkish applicants for seven and six vacancies respectively, and 120 Greek and 43 Turkish candidates actually sat the examinations.

The following were the successful candidates:—

Greek candidates who have qualified for admittance to the first year's course:—

1. Vassilios Papadopoulos of Pakhna, Limassol.
2. Simos G. Vassiliou of Akanthou, Famagusta.
3. Vronis Themistocleous of Episkopi, Paphos.
4. Agamemnon Pericleous of Simou, Paphos.
5. Georgios Ch. Demetriades of Lapithos, Kyrenia.
6. Chrysostomos Riris of Lefkoniko, Famagusta.
7. Christos N. Tseriotis of Tseri, Nicosia.

Turkish candidates who have qualified for admittance to the first year's course:—

1. Hussein Niazi Sami of Lefkoniko, Famagusta.
2. Mehmed Reshad of Alektora, Limassol.
3. Kiazim Nami Hakki of Potamia, Nicosia.
4. Ibrahim Hakki of Androlikou, Paphos.
5. Ali Ekrem of Khoulou, Paphos.
6. Mehmed Niazi Ibrahim, of Psilatos, Famagusta.

Two vacancies occurred in the Greek and one in the Turkish classes at the commencement of the lectures and Chrysostom Riris of Lefkoniko, Christos N. Tseriotis of Tseri and Mehmed Niazi Ibrahim of Psilatos, who were the next on the list of selected candidates, were called to fill the vacancies.

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